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ORIGINAL RESEARCH

Recommendations for physical activity and exercise in persons living with Systemic Lupus Erythematosus (SLE): consensus by an international task force

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ABSTRACT

Objective This international task force aimed to provide healthcare professionals and persons living with systemic lupus erythematosus (SLE) with consensus-based recommendations for physical activity and exercise in SLE.

Methods Based on evidence from a systematic literature review and expert opinion, 3 overarching principles and 15 recommendations were agreed on by Delphi consensus.

Results The overarching principles highlight the importance of shared decision-making and the need to explain the benefits of physical activity to persons living with SLE and other healthcare providers. The 15 specific recommendations state that physical activity is generally recommended for all people with SLE, but in some instances, a medical evaluation may be needed to rule out contraindications. Pertaining to outdoor activity, photoprotection is necessary. Both aerobic and resistance training programmes are recommended, with a gradual increase in frequency and intensity, which should be adapted for each individual, and ideally supervised by qualified professionals.

Conclusion In summary, the consensus reached by the international task force provides a valuable framework for the integration of physical activity and exercise into the management of SLE, offering a tailored evidence-based and eminence-based approach to enhance the well-being of individuals living with this challenging autoimmune condition.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The importance of physical activity is well recognised in systemic lupus erythematosus (SLE), but to date, no dedicated recommendations have been established.

WHAT THIS STUDY ADDS

⇒ An international task force of experts achieved consensus on 18 statements related to physical activity in SLE.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The consensus reached by the international task force provides an evidence-based approach to enhancing the well-being of individuals living with SLE.

INTRODUCTION

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that can significantly impact health-related quality of life and overall well-being.[1] As the understanding of lupus pathogenesis and management evolves, healthcare professionals have begun to explore adjunctive therapeutic strategies to complement pharmacological interventions.[2] In recent years, there has been increasing interest in the role of physical activity and exercise as a non-pharmacological intervention to enhance the health outcomes of people living with SLE.[3 4]

Physical activity and exercise are often used interchangeably, but they represent distinct concepts with subtle differences.[5] The key distinction between physical activity and exercise lies in the intentionality and structured nature of exercise. Physical activity encompasses any bodily movement produced by skeletal muscles that results in energy expenditure. On the other hand, exercise refers to a subset of physical activity that is purposeful, planned and repetitive with the goal of maintaining or improving physical

fitness (ie, cardiorespiratory capacity, muscular strength, flexibility or a combination of these). Exercise often involves adherence to a programme targeting specific components of fitness through progressive increase and planned repetitions.

Despite the clear potential benefits, incorporating physical activity and exercise into the lives of persons living with SLE presents unique challenges.[1] The unpredictable nature of the disease, including flare-ups and varying levels of residual disease activity, demands a careful and personalised approach.[6] Factors such as organ involvement and disease manifestations, individual limitations and overall functional capacity must also be considered. Finally, collaborative efforts between rheumatologists, physiotherapists and other allied healthcare providers are crucial in developing safe and effective exercise regimens that optimise health outcomes while minimising potential risks.[2]

Our international task force aimed to provide healthcare professionals with recommendations for physical activity and exercise in people with SLE. Compared with generic recommendations for physical activity and exercise in people with inflammatory arthritis and osteoarthritis,[7] tailored recommendations are warranted by taking into account the potential SLE disease-specific considerations and challenges such as joint involvement, photosensitivity as well as certain comorbidities, such as cardiovascular disease (CVD), osteopenia, metabolic disease and obesity,[8] which require specific attention. These recommendations can serve as a guide for healthcare professionals to optimise patient outcomes, enhance overall health and well-being and empower persons living with SLE to actively participate in their self-management.

METHODS

This task force was headed by a steering committee composed of a rheumatologist specialised in SLE (LA), a rheumatologist specialised in sports medicine (JB) and an adapted physical activity coordinator (SG) and involved a panel of 17 experts from various backgrounds (rheumatology, internal medicine, rehabilitation medicine, physiotherapy, exercise physiology and sports sciences) with a specific interest in lupus and physical activity, as well as 2 persons living with SLE (among the 3 invited to participate). The experts were selected on the basis of leading authorship in the most recent publications about physical activity and exercise in lupus, as identified by the SLR. While any rheumatologist could have agreed on the general need for physical activity and exercise in SLE, the main objective of the task force was to provide specific recommendations for physical activity and exercise in SLE. The patients involved in the task force were specifically suggested by the board of the patient association Lupus Europe, for their knowledge of SLE and their personal and/or professional knowledge of physical activity.

Systematic literature review

First, we conducted a systematic literature review (SLR) about physical activity and exercise in SLE, which has been previously published.[2] In summary, the SLR showed that aerobic and resistance training programmes had clear benefits and were well tolerated by persons with stable SLE disease. The results of this SLR were used to inform the preparation of the statements about physical activity and exercise in SLE.

Consensus methodology

Following preliminary discussions, a virtual meeting was held in March 2023, during which a preliminary set of research questions based on the SLR and prepared by the steering committee were refined through discussion among participants. The group discussed alternative wording of suggested statements and ensured relevance to the specific context of SLE. A Delphi process was then organised to achieve consensus. Delphi is a systematic process involving iterative rounds of voting, data collection and analysis to derive expert consensus on a topic. This interactive process involved the international panel of experts who were asked to rate the level of agreement of each statement independently and anonymously on a 0–10 point scale (0, totally disagree, and 10, totally agree) during the two consecutive rounds, based on their expertise and the evidence from the SLR. At each Delphi round, anonymised and aggregated responses of prior rounds were provided, and consensus for each statement was defined as follows: statements that were scored 7–10 by ≥75% of the experts were selected, while those scored 0–3 by ≥75% were rejected. Statements that did not reach these prespecified levels of agreement were conditionally included in the subsequent Delphi round, together with comments from the panel, to be revoted. Where appropriate, the resulting final statements were grouped according to content similarity and then merged into final recommendations. Finally, members of the panel were asked to provide individual agreement with the final recommendations, which were harmonised for style, terminology and wording. The level and grade of evidence were assessed according to the Oxford Centre for Evidence-Based Medicine.[9]

Statistical analyses

Qualitative data were expressed as numbers and percentages and quantitative data as the mean and SD as well as the median (and IQR). Statistical analyses were performed using the software JMP V.13 (SAS Institute, Cary, NC, USA).

RESULTS

The task force agreed by consensus on 3 overarching principles (table 1) and 15 statements (table 2) regarding physical activity and exercise in SLE. The detailed results of each Delphi round are shown in the supplementary document.

Table 1 Overarching principles for physical activity and exercise in systemic lupus

Overarching principles	Label	Level of agreement
A	The decision to engage in physical activity and exercise should be the result of a shared decision between persons living with SLE and their physician	Mean (SD): 9.59 (0.85) Median (IQR): 10 (0)
B	The expected benefits of physical activity and exercise should be explained to persons living with SLE	Mean (SD): 10 (0) Median (IQR): 10 (0)
C	The absence of contraindications to physical activity and exercise should be communicated to other healthcare providers of persons living with SLE (eg, doctor, nurse and physiotherapist)	Mean (SD): 9.59 (0.80) Median (IQR): 10 (0.80)

Overarching principles

The three overarching principles provide general information about physical activity and exercise in SLE and highlight the role of physician-patient interaction and multidisciplinary care in SLE.

The decision to engage in physical activity and exercise should be the result of a shared decision between persons living with SLE and their physician.

Shared decision-making is being increasingly implemented in the context of rheumatic diseases,[10] including SLE,[11] and applies to both pharmacological and non-pharmacological disease management.[3] Regarding the latter, a shared decision-making process allows an additional opportunity for persons living with SLE to discuss the modalities, expected benefits and potential contraindications of physical activity and exercise in SLE with their healthcare providers. Therefore, shared decision-making may result in better adherence to physical activity programmes[12] by offering the opportunity to address barriers for persons living with SLE to be physically active.

The expected benefits of physical activity and exercise should be explained to persons living with SLE

Among the potential barriers that may reduce people's participation in physical activity and/or exercise is the lack of detailed information regarding the expected benefits of these activities.[5] Common barriers to the implementation of a physical activity programme include negative past experiences, a sedentary lifestyle and the lack of previous experience of being physically active.[13] Results from the SLR[2] highlighted the many benefits of physical activity and exercise in SLE, including significant improvements in aerobic capacities, limb function, grip, pinch strength and fatigue in SLE.[14] The task force felt that it was crucial to discuss these elements with persons living with SLE as a way to improve engagement in physical activity and exercise programmes.

The absence of contraindications to physical activity and exercise should be communicated to other healthcare providers (eg, doctor, nurse and physiotherapist)

Physician resistance to endorsing physical activity and exercise emerged as a significant obstacle in discussions on rheumatic diseases across multiple focus groups.[15 16] Conversely, factors such as effective coping mechanisms were identified as facilitators.[13 17] It is imperative to communicate to healthcare professionals and caregivers including close entourage that engaging in physical activity is not contraindicated in SLE.

Statements

The following 15 statements provide detailed information about preliminary assessments, indications, precautions and implementation of physical activity and

Table 2 Recommendation statements for both physical activity and exercise in SLE

Statements	Label	Level of agreement
1	In case of osteonecrosis or Jaccoud's syndrome, evaluation by a specialist (rheumatologist, orthopaedic or sports medicine) should be performed before starting physical activity (4/C).	Mean (SD): 9.45 (0.86) Median (IQR): 10 (1)
2	In case of outdoor activity, adapted measures such as photoprotection are necessary, and use of adequate clothing against cold is recommended if Raynaud's phenomenon is present (1b/A)	Mean (SD): 9.95 (0.21) Median (IQR): 10 (0)
3	Physical activities at high risk of trauma should be performed with caution in persons with SLE using anticoagulants or antiaggregant treatments (5/D)	Mean (SD): 9.73 (0.63) Median (IQR): 10 (0)
4	In case of lupus flare, potential contraindication to physical activity and exercise should be reassessed (5/D)	Mean (SD): 9.91 (0.43) Median (IQR): 10 (0)
5	During articular flares, we recommend avoiding involving the inflamed joints during physical activity and exercise (5/D)	Mean (SD): 9.68 (0.89) Median (IQR): 10 (0)

SLE, systemic lupus erythematosus.

Table 3 Recommendation statements for physical activity in SLE

6	Physical activity is recommended in all persons with SLE after a medical evaluation of contraindications, if deemed necessary (1a/A).	Mean (SD): 9.90 (0.29) Median (IQR): 10 (0)
7	The baseline level of physical activity should be assessed before starting physical activity, using dedicated questionnaires or the number of steps per day (5/D).	Mean (SD): 8.86 (1.46) Median (IQR): 9 (1.75)
8	Implementation of physical activity should be adapted in terms of frequency and intensity for each individual, taking into account their abilities, preferences and comorbidities with the aim of adherence to and maintenance of physical activity over the long term (1b/A)	Mean (SD): 9.77 (0.61) Median (IQR): 10 (0)
9	Unless otherwise indicated, all persons with SLE with inactive disease or mild disease activity should gradually reach WHO recommendations and/or 150–300 min per week of moderate intensity associated with strengthening activities at least 2 days per week (5/D).	Mean (SD): 9.68 (0.57) Median (IQR): 10 (0.75)

SLE, systemic lupus erythematosus.

exercise in SLE (tables 2–4). Taken together, they ensure that persons living with SLE may safely engage in physical activities that may suit their abilities and improve their general health.

The recommendation statements for both physical activity and exercise in SLE are shown in table 2.

Statement 1: in case of osteonecrosis or Jaccoud's syndrome, evaluation by a specialist (rheumatologist, orthopaedic and sports medicine) should be performed before starting physical activity (4/C)

Task force members expressed concern about the potential for adverse musculoskeletal outcomes during physical activity in persons living with SLE with Jaccoud's syndrome or osteonecrosis. Members believed that an additional evaluation by a musculoskeletal specialist is necessary to assess the feasibility of involving affected body parts in physical activity. This evaluation would also be crucial for identifying a potential need for orthotic devices or surgical interventions[18] as it has been shown that hand surgery, orthoses and technical aids improve hand and finger functions in various domains such as work and self-care.[19]

Statement 2: in case of outdoor activity, adapted measures such as photoprotection are necessary, and the use of adequate clothing against cold is recommended if Raynaud's phenomenon is present (1b/A).

Ultraviolet (UV) radiation has the potential to trigger flares in both cutaneous and systemic lupus.[20] Consistent with the 2023 European Alliance of Associations for Rheumatology recommendations for the non-pharmacological management of SLE, the task force advocates for photoprotection measures in SLE.[3] This includes practices such as direct sun avoidance, physical barriers like hats, sunglasses and long-sleeved clothing and the regular application of broad-spectrum sunscreen. Moreover, it is recommended to steer clear of the most UV-exposed hours of the day (which may vary with geographical location) when possible.[21] Additionally, for persons living with SLE with Raynaud's phenomenon, the task force suggests protection against low temperatures by using gloves or heating devices. It is also advised to avoid direct contact with cold surfaces and ensure thorough drying of the skin during and after physical activity.[22]

Statement 3: physical activities at high risk of trauma should be performed with caution in persons with SLE using anticoagulants or antiaggregant treatments (5/D)

Following international recommendations, persons living with SLE who are positive for antiphospholipid

Table 4 Recommendation statements for exercise in SLE

10	A medical evaluation should be performed before starting exercise in SLE in order to identify potential contraindications and allow for personalised adaptations following physical abilities, preferences and comorbidities with the aim of adherence to practice over the long term (1b/A)	Mean (SD): 9.32 (2.15) Median (IQR): 10 (0)
11	For better personalisation, exercise programmes should be supervised by qualified professionals (physiotherapists or professionals trained in adapted physical activity) (1b/A)	Mean (SD): 9.00 (1.23) Median (IQR): 9.5 (2.0)
12	Implementation of exercise should be gradual by adapting the frequency and intensity to the individual's capacities and comorbidities (1b/A)	Mean (SD): 9.82 (0.50) Median (IQR): 10 (0)
13	Each exercise session should start with a warm-up at low to moderate intensity and should end up with a cooling down period, including stretching (5/D)	Mean (SD): 9.68 (0.57) Median (IQR): 10 (0.75)
14	Exercise programmes should be performed in 3–5 sessions each week and include both aerobic and resistance training exercises (1a/A).	Mean (SD): 9.18 (2.17) Median (IQR): 10 (0.75)
15	Resistance training should be performed for 1–3 sets per exercise with 8–12 repetitions using rest periods of 1–3 min (1b/A).	Mean (SD): 8.41 (2.86) Median (IQR): 10 (2.0)

SLE, systemic lupus erythematosus.

antibodies or have thrombotic antiphospholipid syndrome are advised to undergo primary thromboprophylaxis, using low-dose aspirin or anticoagulation, respectively.[23] It is crucial to note that certain physical activities (eg, contact sport and extreme sports with risks of fall) have been linked to an elevated risk of trauma and bleeding.[24] Consequently, these activities should be approached cautiously in persons living with SLE with severe thrombocytopaenia or those undergoing systemic anticoagulation or antiplatelet treatments. For a comprehensive understanding of the associated risks of injury in various sports, the US National Hemophilia Foundation offers a detailed list of sports activity injury risks[25] that can serve as a valuable resource for both healthcare providers and people with SLE.

Statement 4: in case of lupus flare, potential contraindications to physical activity and exercise should be reassessed (5/D)

Consistent with the findings of the SLR,[2] the task force emphasises the broad recommendation of physical activity and exercise for persons with SLE who exhibit little to no disease activity. This endorsement underscores the potential benefits of engaging in regular physical activity for overall health and well-being among people with SLE. However, it is essential to exercise caution and consider potential contraindications in cases of active SLE disease manifestations, such as myocarditis, pericarditis, pleuritis, myositis and other inflammatory conditions. In instances where active disease is present, careful evaluation and consultation with the rheumatologist are warranted to determine the appropriateness and safety of engaging in physical activity, ensuring that the chosen activities align with the individual's health status and medical considerations.

Statement 5: during articular flares, we recommend not to involve the inflamed joints during physical activity and exercise (5/D)

In instances of SLE flares, the general consensus is that people should strive to remain as active as possible.[26] While no conclusive evidence suggests that high-impact activities are strictly prohibited in the context of active inflammatory arthritis,[7] the task force advises a cautious approach. Specifically, it is recommended to avoid engaging inflamed joints, as doing so may lead to increased pain and the potential for joint damage. Instead, the emphasis should be on directing activity towards unaffected joints until the flare has subsided, promoting a more targeted and pain-conscious approach to physical engagement during periods of heightened inflammation. In particular, maintaining adequate mobility of inflamed joint using physiotherapy below the pain threshold is recommended to reduce the risk of damage with vicious positions, while minimising the risk of complex regional pain syndrome.

The recommendation statements for physical activity in SLE are shown in table 3.

Statement 6: physical activity is recommended in all people with SLE, after a medical evaluation of contraindications, if deemed necessary (1a/A)

Owing to its numerous advantages, the task force recommends physical activity for all persons living with SLE.[27] Nonetheless, it is crucial to note that the majority of studies on physical activity in SLE have focused on stable individuals with little or no disease activity.[2] Consequently, exercising caution is advisable when initiating physical activity in individuals with active disease.

Statement 7: the baseline level of physical activity should be assessed using validated questionnaires (or the number of steps per day) (5/D)

The task force emphasised the significance of evaluating the baseline level of physical activity to customise physical activity interventions in SLE. Various methods can assess baseline physical activity, encompassing direct and objective measures such as pedometry, heart rate monitoring and accelerometry or subjective self-reported approaches like validated questionnaires.[28] Although there is currently no instrument specifically designed for assessing physical activity in SLE, general population tools like the International Physical Activity short-form questionnaire[29] can be used. However, physical activity levels reported using these instruments often exceed what is observed with objective measures.[30] While pedometers offer a straightforward and valid approach to quantifying daily steps,[31] accelerometers are generally preferred due to their superior ability to assess the intensity, frequency and duration of physical activity, as well as energy expenditure.[32]

Statement 8: implementation of physical activity should be adapted in terms of frequency and intensity for each person with lupus, taking into account their abilities, preferences and comorbidities with the aim of adherence and maintenance of physical activity over the long term (1b/A)

By advocating for the customisation of frequency and intensity, the statement recognises the inherent variability among persons living with SLE regarding physical abilities, preferences and comorbidities. This tailored approach is designed to optimise adherence to prescribed physical activity and ensure the sustained engagement of patients over the long term.[33] WHO recommendations for physical activity state that individuals should start with small amounts of physical activity and gradually increase the frequency, intensity and duration of physical activity over time.[34] Acknowledging and accommodating individual differences in abilities and preferences are paramount, fostering a sense of ownership and motivation for patients to adhere to the prescribed regimen. Additionally, consideration of comorbidities is crucial, as it allows for the development of physical activity plans that are both safe and effective, contributing to overall health and well-being.

Statement 9: unless otherwise indicated, all persons with inactive SLE or mild disease activity should gradually reach WHO recommendations and/or 150–300 min per week of moderate-intensity physical activity, associated with strengthening activities at least 2 days per week (5/D)

Consistent with the SLR, the task force advises people with inactive or mild SLE disease activity to adhere to the WHO recommendations tailored for the general population. Specifically, persons living with SLE are encouraged to progressively increase the frequency, intensity and duration of physical activity over time, to attain 150–300 min per week of moderate-intensity activity, complemented by strengthening activities on at least 2 days per week.[34] Moderate-intensity physical activity, as defined by the WHO, involves activities performed at 3–5 times the intensity of rest, measured in metabolic equivalent of task, equivalent to the energy cost of resting quietly (defined as an oxygen uptake of 3.5 mL/kg/min)[35] or perceived exertion levels of 5 or 6 on a 0–10 scale.[34] WHO further categorises muscle-strengthening activities as those involving resistance training, weight lifting or exercises that require muscles to work against an applied force or weight. Muscle-strengthening activities may incorporate weights, elastic bands or using body weight for resistance training.[36]

The recommendation statements for exercise in SLE are shown in table 4.

Statement 10: a medical evaluation should be performed before starting exercise in SLE, in order to identify potential contraindications and allow for personalised adaptations following physical abilities, preferences and comorbidities with the aim of adherence to practice over the long term (1b/A)

The SLR[2] brought attention to a consistent practice in studies, which involved incorporating a preliminary electrocardiogram and/or a cardiorespiratory fitness test before engaging in vigorous-intensity physical activity, aligning with the guidelines set forth by the American College of Sports Medicine (ACSM) for individuals at an elevated risk of occult CVD.[37] In light of these findings, the task force strongly advocates adopting a proactive approach to ensure that exercise programmes are appropriate and safe for persons living with SLE before embarking on an exercise programme; the task force recommends that persons living with SLE undergo a comprehensive medical evaluation to ascertain the absence of any contraindications. This precautionary step aligns with best practices in ensuring the safety and suitability of physical activity interventions in SLE.

Statement 11: for better personalisation, exercise programmes should be supervised by qualified professionals (physiotherapists or professionals trained in adapted physical activity) (1b/A)

A primary obstacle towards promoting physical activity and exercise among persons living with SLE lies in achieving consistent adherence. Existing research indicates that persons living with SLE who participate in supervised exercise regimens exhibit heightened adherence and sustained commitment over time.[38] In alignment with this evidence, the task force reached a consensus that supervised exercise programmes, or home-based exercise programmes coupled with professional counselling, are preferable for people with SLE. This preference is rooted in the understanding that such structured interventions enhance adherence, thereby fostering more effective and enduring engagement in physical activity among those with SLE. Additionally, it is worth noting that in the SLR, continuous supervision during the exercise programme has been associated with increased adherence and therefore appears desirable, although not always feasible.

Statement 12: implementation of exercise should be gradual by adapting the frequency and intensity to the person's capacities and comorbidities (1b/A)

Typically, exercise programmes require adaptation across four key modifiable components: frequency, intensity, time and type of exercise.[33] In the context of SLE, studies have implemented a gradual escalation of training loads tailored to individual capacities.[2] This adjustment has been informed by various metrics such as the respiratory Borg Scale,[39] heart rate reserve (HRR) (targeting 40%–75% of the HRR)[40 41] or a cardiopulmonary test (aiming for an intensity between the ventilatory aerobic threshold and 10% below the respiratory compensation point).[42] Endurance exercise sessions typically span between 20 min and 30 min, gradually increasing to 50 min over 4 week progressive intervals.[39 42] In the case of resistance training, progression in overload is recommended when a patient can consistently perform more than 12 repetitions on the final training set for 2 consecutive sessions.[43]

Statement 13: each exercise session should start with a warm-up at low to moderate intensity and should end up with a cooling down period, including stretching (5/D)

The task force advises initiating each exercise session with a warm-up phase at a low to moderate intensity, which is practically achieved by performing the planned exercises at a reduced intensity.[44] This raises the body and muscle temperature, facilitating optimal metabolic adjustments for more vigorous intensity exercises.[45] While the debate over the necessity of a cool-down period persists,[46] task force members prefer an active cool-down at a low to moderate intensity. This involves engaging the same muscle groups used during the exercise session, promoting a gradual return to baseline physiological levels.

Statement 14: exercise programmes should be performed in 3–5 sessions each week and should include both aerobic exercises and resistance training exercises (1a/A)

The SLR underscored the distinct and complementary advantages of aerobic and resistance training exercises for people with SLE. Aerobic exercise, also known as endurance or 'cardio', entails rhythmic engagement of large muscle groups over an extended period. A typical

session involves a 5 min warm-up, followed by 20–50 min of aerobic training performed by walking, running or cycling, concluding with a 5 min cool-down.[39–43] On the other hand, resistance training, or strength training, involves the deliberate activation of specific skeletal muscles against external resistance, which may come from body mass, free weights or various exercise modalities. This typically targets 7–10 muscle groups with a defined number of sets and repetitions at an intensity personalised for each patient.[43] In the context of SLE, aerobic training has been associated with enhancements in VO_{2max} and a reduction in cardiovascular risk, while resistance training has demonstrated improvements in strength and overall function.[2] Beyond these cardiovascular and musculoskeletal benefits, aerobic exercise may positively impact fatigue symptoms,[47] while resistance training has also been linked to the preservation of functional abilities and the prevention of conditions such as osteoporosis and sarcopenia.[48] Recognising the multifaceted advantages of both aerobic and resistance training, the task force strongly recommends the incorporation of both exercise modalities. This approach is intended to maximise the anticipated benefits of physical activity for people with SLE, addressing cardiovascular and musculoskeletal aspects for comprehensive well-being.

Statement 15: resistance training should be performed for 1–3 sets per exercise with 8–12 repetitions using rest periods of 1–3 min (1b/A)

According to the 2018 ACSM Physical Activity Guidelines,[36] effective resistance training should involve all major muscle groups, with at least one set comprising 8–12 repetitions at least twice a week. Notably, a study conducted in persons with SLE employed 3 sets with 15 repetitions per exercise.[39] For beginners, the recommended intensity typically begins at 60%–70% of the 1-repetition maximum for 8–12 repetitions, while experienced exercisers may have broader intensity ranges tailored to their specific goals.[33] The guidelines further advise prioritising large muscle groups before smaller ones and incorporating multiple-joint exercises ahead of single-joint exercises, often pairing opposing muscle groups. Examples include the bench press, leg press, latissimus dorsi pulldown, leg extension, seated row, squat and sit-up.[43] Longitudinal studies on resistance training indicate that longer rest intervals, such as 2–3 min, compared with shorter intervals of 30–40 s between each sequence, result in greater increases in strength over time.[49]

DISCUSSION

The derivation of tailored, specific recommendations for physical activity in SLE becomes imperative due to the distinctive nature of the disease and its potential impact on individuals' physical capacities and overall health. SLE can affect diverse organ systems, including joints, skin, kidneys and the cardiovascular system, resulting in physical limitations and heightened vulnerability to complications. To address these challenges, an international task force consisting of experts from various disciplines (rheumatology, internal medicine, rehabilitation medicine, physiotherapy, exercise physiology and sports sciences), and input from two people with SLE, employed the Delphi methodology. This collaborative effort yielded consensus on 3 overarching principles and 15 recommendations to guide the implementation of physical activity and exercise in SLE.

The overarching principles underscore the significance of shared decision-making between persons living with SLE and their physicians. Despite the well-documented benefits associated with physical activity and exercise in SLE, a notable percentage of people fail to adhere to the WHO recommendations.[50 51] Consequently, it becomes crucial to convey the anticipated benefits of physical activity to persons living with SLE and inform other healthcare providers that engaging in physical activity is not contraindicated, thereby promoting compliance.

The 15 statements incorporate existing evidence, emphasising the necessity of considering disease activity, potential contraindications and comorbidities before initiating physical activity and exercise. This underscores the pivotal role of adapted physical activity. Using available evidence,[2] the task force formulates specific targets and activities to maximise the anticipated benefits of physical activity and exercise in SLE, while minimising potential harm.

Notably, the SLR pinpointed several gaps and areas of uncertainty regarding the optimal approach to physical activity and exercise in SLE. Consequently, some of our recommendations stem from expert consensus, informed by available data from other rheumatic diseases. Despite these challenges, the task force diligently used all available evidence to furnish healthcare providers with clear recommendations, empowering them to guide persons living with SLE towards leading active and healthy lives despite the complexities posed by the disorder.

Incorporating physical activity and exercise into the management of SLE holds great potential to improve the health outcomes and quality of life of patients with this chronic autoimmune condition.[2] By providing specific recommendations for physical activity and exercise to people with SLE, healthcare professionals can address the potential challenges and considerations associated with the disease, optimise the benefits and minimise the risks. Considering the unique characteristics of each person with SLE, including their current physical abilities, disease activity, organs affected by SLE itself as well as comorbidities, enables healthcare professionals to develop safe and effective exercise programmes. These tailored recommendations take into account the fluctuating nature of SLE, overall health and capacities from a holistic point of view, including the presence of potential comorbidities, allowing individuals with SLE to engage in physical activity and exercise that suits their abilities, preferences and needs while supporting their overall health and well-being. By implementing these recommendations

into clinical practice, healthcare professionals can optimise SLE care and empower patients to live active and healthy lives.

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