

AHA SCIENTIFIC STATEMENT

Supporting Physical Activity in Patients and Populations During Life Events and Transitions: A Scientific Statement From the American Heart Association

Abbi D. Lane-Cordova, PhD, FAHA, Chair; Gerald J. Jerome, PhD, FAHA; Amanda E. Paluch, PhD; Eduardo Esteban Bustamante, PhD; Michael J. LaMonte, PhD, MPH, FAHA; Russell R. Pate, PhD; R. Glenn Weaver, PhD; Kashica J. Webber-Ritchey, PhD, MHA, RN; Bethany Barone Gibbs, PhD, FAHA, Vice Chair; on behalf of the Committee on Physical Activity of the American Heart Association Council on Lifestyle and Cardiometabolic Health

Abstract: Achieving recommended levels of physical activity is important for optimal cardiovascular health and can help reduce cardiovascular disease risk. Emerging evidence suggests that physical activity fluctuates throughout the life course. Some life events and transitions are associated with reductions in physical activity and, potentially, increases in sedentary behavior. The aim of this scientific statement is to first provide an overview of the evidence suggesting changes in physical activity and sedentary behavior across life events and transitions. A second aim is to provide guidance for health care professionals or public health workers to identify changes and promote physical activity during life events and transitions. We offer a novel synthesis of existing data, including evidence suggesting that some subgroups are more likely to change physical activity behaviors in response to life events and transitions. We also review the evidence that sedentary behavior changes across life events and transitions. Tools for health care professionals to assess physical activity using simple questions or wearable devices are described. We provide strategies for health care professionals to express compassion as they ask about life transitions and initiate conversations about physical activity. Last, resources for life phase-specific, tailored physical activity support are included. Future research needs include a better characterization of physical activity and sedentary behavior across life events and transitions in higher-risk subgroups. Development and testing of interventions designed specifically to combat declines in physical activity or increases in sedentary behavior during life events and transitions is needed to establish or maintain healthy levels of these cardiovascular health-promoting behaviors.

Key Words: AHA Scientific Statements ■ exercise ■ life change events ■ sedentary behavior

Achieving adequate physical activity is an essential component of the American Heart Association's Life's Simple 7, a group of modifiable risk factors intended to promote optimal cardiovascular health and lower the risk of a cardiovascular event.¹ Physical activity is inversely associated with cardiovascular mortality in a dose-response manner² and recommended to prevent and treat other chronic conditions and cardiovascular disease risk factors, such as obesity, depression, diabetes, and some cancers.³ The Physical Activity Guidelines for Americans provide evidence-based recommendations for the duration and intensity of physical activity to achieve these health benefits across the

life span (Table 1).³ However, in the United States, only 20% of adolescents and 24% of adults achieve recommended levels of physical activity.⁸ Although these rates appear universally low, accumulating data suggest that physical activity levels may change significantly in response to commonly experienced life events or transitions.⁹ Developing a better understanding of these fluctuations could lead to targeted interventions to help individuals initiate and maintain physical activity for better overall and cardiovascular health during critical life events and transitions.

Life events are discrete and mark the beginning or ending of a certain status.⁹ Life transitions can be

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Table 1. Physical Activity Guidelines for Americans and Corresponding Steps per Day Estimates

Activity guidelines	Preschool-aged children (3–5 y)	Children and adolescents (6–17 y)	Adults (18–65 y)	Older adults (65+ y)*
2018 Physical Activity Guidelines	Should be physically active throughout the day to enhance growth and development. Adult caregivers of preschool-aged children should encourage active play that includes a variety of activity types.	60 min (1 h) or more of moderate-to-vigorous physical activity daily. This should include muscle strengthening 3 d/wk and bone strengthening activities 3 d/wk	At least 150–300 min/wk of moderate-intensity, or 75–150 min/wk of vigorous-intensity aerobic physical activity, or an equivalent combination. Plus, muscle-strengthening exercise 2 d/wk.†	At least 150–300 min/wk of moderate-intensity, or 75–150 min/wk of vigorous-intensity aerobic physical activity, or an equivalent combination. Should include multicomponent physical activity that includes balance, aerobic, and muscle-strengthening activities
Estimated minimal number of steps per day from wearable activity monitors‡	≥10000 steps/d	≥10000 steps/d	≥7000 steps/d	≥7000 steps/d

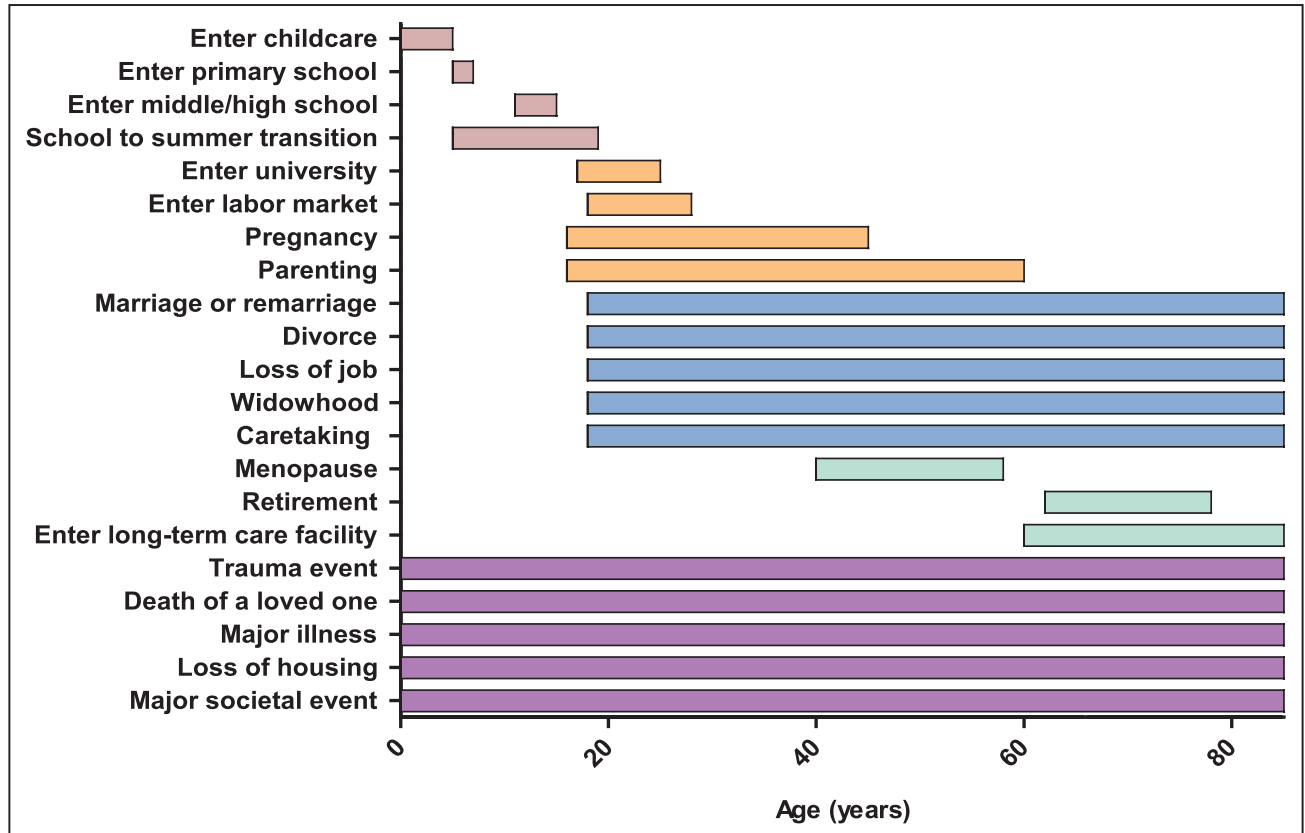
*Adults with chronic health conditions or disabilities, who are able, should follow the same recommendations as adults/older adults. When adults with chronic conditions or disabilities are not able to meet these guidelines, they should engage in regular physical activity according to their abilities and should avoid inactivity.³

†Pregnant and postpartum women should do at least 150 minutes of moderate-intensity aerobic activity. Vigorous-intensity activity can be performed if habitually engaged in pre-pregnancy.⁴

‡Steps per day estimations are based on preliminary research findings based on norm-referenced assessment of how many steps would be equivalent to the recommended amounts of moderate-vigorous physical activity and are not a part of the 2018 Physical Activity Guidelines.^{5–7}

defined as periods of adjustment that are often linked to a life event (Figure).⁹ For example, becoming a parent is a life event, whereas parenting is a life transition. Life events and transitions are often characterized by some disruption or change in routines or resources. According to the critical windows theory, establishing good physical activity and sedentary behavior habits during

life events and transitions could shape lifelong levels of these behaviors.¹⁰ Existing reviews demonstrate definitively that life events and transitions influence physical activity.⁹ However, synthesis is needed to inform clinical and public health interventions. This includes succinctly describing factors that may be associated with resilience or susceptibility to reductions in physical activity

**Figure. Life events and transitions.**

Some life events and transitions occur throughout the life course, whereas others likely occur at specific phases of the life course.

Table 2. Summary of Effects of Life Events and Transitions on Physical Activity

Life event or transition	Summary of evidence from systematic reviews
Conclusion drawn: decrease in physical activity	
Entry to elementary school	This conclusion was based on consideration of 5 studies, all of which reported decreased physical activity. ⁹
Entry to middle or high school	Three relevant systematic reviews were identified. Two of them concluded that decreased physical activity was consistently observed in the studies reviewed. ⁹ One systematic review concluded that sedentary time was increased with this transition. ¹¹
Entry to college/university	One systematic review was identified, and it concluded that physical activity decreases with this transition. ⁹ This conclusion was based on review of 14 studies, 13 of which reported decreased physical activity.
Entry to labor market	A single systematic review was identified, and it considered 11 relevant studies. Six studies reported decreased physical activity, and the others reported no change or inconsistent findings. The systematic review concluded that physical activity decreases with this transition. ⁹
Marriage or civil union	Two systematic reviews were identified, and both concluded that physical activity decreases with this event. One of the reviews reported that 10 of 16 studies reported decreased physical activity. ⁹
Pregnancy	Three systematic reviews were identified, and all 3 concluded that pregnancy is associated with decreased physical activity. One of the reviews was based on 4 studies, all of which reported decreased physical activity. ⁹
Parenting	Two systematic reviews both reported decreased physical activity with this transition. One of the reviews found that 18 of 19 studies considered reported decreased physical activity with a parenting transition. ⁹
Retirement	Four systematic reviews considered a relatively large number of studies. The 2 most recent reviews considered 36 and 29 studies, and both reviews concluded that physical activity is increased soon after retirement but then decreases over time. ^{9,12}
Entering long-term care facility	Two systematic reviews considered a small number of primary research studies. The studies and reviews all concluded that physical activity is decreased with a transition to living in a long-term care facility. ⁹
No conclusion drawn: null or inconsistent findings	
Trauma event	Two systematic reviews both considered a small number of relevant studies, and both concluded that there is no consistently reported effect on physical activity. ⁹
Divorce	One systematic review considered 9 studies and found no consistent effect on physical activity. ⁹
Remarriage after divorce or widowhood	One systematic review considered 3 relevant studies and concluded that there is no consistent effect on physical activity. ⁹
Loss of job	Based on review of 5 studies, a systematic review concluded that there is no consistently observed effect on physical activity. ⁹
Major illness	A systematic review considered 15 studies on the effects of developing or recovering from a range of major illnesses. ⁹ Findings across the studies were inconsistent and no conclusion could be drawn regarding an effect on physical activity.
Change of housing or homelessness	One systematic review considered 10 studies on the effects of changing housing (ie, moving) on physical activity. Findings across the studies were inconsistent. ⁹
Menopause	One systematic review found only 4 studies, and the findings regarding an effect on physical activity were not consistent. ⁹
Death of a spouse/partner	Two systematic reviews were identified, but findings of studies were too inconsistent to draw a conclusion regarding an effect on physical activity. ⁹
No systematic review has been published	
Entry into childcare, summer break for schoolchildren, caregiving, major societal event, eg, the 9/11 terrorist attacks and the coronavirus disease-2019 pandemic	

Table 2 summarizes evidence and provides details provided from systematic reviews. The effects of discrete life events and transitions on physical activity were sorted into 3 categories based on the findings from systematic reviews.

during life events and transitions, describing trends in sedentary behavior during life transitions, and providing practical tools to assess, promote, and support physical activity when life events and transitions occur. The aim of this scientific statement is to first provide a comprehensive overview of changes in physical activity throughout life events and transitions. The second part of this scientific statement provides guidance and tips for health care professionals to identify, address, and promote physical activity during life events and transitions, and community-level approaches to promote physical activity during life events and transition periods, as well.

PART I. EFFECTS OF LIFE TRANSITIONS AND EVENTS ON PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR

Findings regarding the effects of life events and transitions on physical activity are highly variable across life events, transitions, and population samples.⁹ We provide a summary of research findings and conclusions regarding the effects of prespecified categories of life events and transitions on physical activity (Table 2). This summary was based on a search for published systematic reviews of the research literature on each category of life event or transition. Search findings fell into 3 groups: (1)

≥1 systematic reviews were available, and a conclusion regarding an effect on physical activity was drawn by the authors; (2) ≥1 systematic reviews were available, but no conclusion regarding an effect on physical activity could be drawn because of conflicting findings, or a null effect on physical activity was reported; or (3) no systematic review had been published.

Effects of Life Events and Transitions on Physical Activity in Specific Subgroups

Examining subgroup analyses on the effects of life events and transitions may help identify those most in need of support across transitions and events. A recent study of 643 youths from suburban and rural South Carolina found that physical activity decreased during the middle school transition in Black, White, and Latinx youth regardless of race or ethnicity.¹³ One other large, longitudinal study found that leaving university had a more detrimental effect on physical activity in people of color versus White individuals.¹⁰ In the same study, individuals with higher education levels were less likely to decrease physical activity during adult life transitions or events.¹⁰ Although preliminary, data regarding the effects of the coronavirus disease 2019 (COVID-19) pandemic on physical activity suggest heterogeneity in activity patterns during the initial shutdowns in the United States. In a primarily White, female cohort, living alone and lower income were related to reducing physical activity, whereas the purchase of home exercise equipment was related to increasing physical activity during the initial public venue shutdowns and other restrictions from April to May 2020.¹⁴ Another study conducted in children enrolled in an obesity clinical trial who were mostly from Black or Latinx families with income ≤200% of the federal poverty level also reported divergent physical activity responses to the COVID-19 pandemic.¹⁵

More substantial evidence related to subgroup differences in the impact of life transitions and events on physical activity supports that, among heterosexual couples, women are more likely than men to decrease physical activity in response to pregnancy and parenting.⁹ Recent American Heart Association scientific statements on cardiovascular health in sexual or gender minority populations and Black American adults noted that some sexual or gender minority groups and Black Americans were more likely to have inadequate physical activity than nonsexual or gender minority or White Americans, although these reports were lacking details regarding physical activity levels during life events and transitions.^{16,17}

Thus, limited data indicate that certain subgroups are more vulnerable to negative effects of life events and transitions on physical activity.^{9,10,14} Specifically, individuals with lower education, who live alone, have less access

to safe outdoor space, Black Americans, sexual or gender minority groups, and women during pregnancy and parenthood may have a greater need of physical activity support across certain events and transitions.^{5,14–17} Future research is needed to specifically elucidate the influence of life events and transitions on physical activity in these and other subgroups with higher risk of inadequate physical activity.

Correlates of Physical Activity During Different Life Phases

The socioecological model, which spans individual, social, environmental, and policy contributors, provides a comprehensive framework for examining determinants of physical activity.¹⁸ This multilevel framework influences all types of activity, such as transportation, work/school, or leisure. Some factors demonstrate a consistent relationship across the life span, whereas others are more influential during specific life events or transitions.^{18,19} Acknowledging the interrelationships among determinants may be especially important for understanding and promoting physical activity during life transitions and events.

General Factors for Youth (<18 Years)

At the individual level, sex, age, motor coordination, time outdoors, body image, physical activity preferences, physical activity intentions, perceived barriers, attitude, self-efficacy, goal orientation, motivation, and school sports and physical education participation seem to influence physical activity levels.^{19,20} At the interpersonal level, parental education, parental physical activity levels, parental weight status, and social support influence physical activity.¹³ At the environment level, crime rates and perception of safety, neighborhood walkability, traffic speed and volume, proximity to recreation facilities or school, land-use mix, residential density, access to programs and facilities, and school resources have been shown to influence youth's engagement in physical activity.^{19–22} COVID-19–related restrictions and stay-at-home orders have also been related to changes in physical activity in youth, although fully synthesized data are not yet available.⁹

General Factors for Adults (18+ Years)

Better health status, self-efficacy, past history and intention to exercise, perceived benefits of physical activity, enjoyment, and lower stress are individual-level correlates and determinants of physical activity among adults.¹⁸ At an interpersonal level, social support positively determines physical activity levels. Social norms and cultural values can affect physical activity both positively and negatively.¹⁸ At the environmental level, proximity and access to recreation facilities or greenspaces, neighborhood aesthetics, transportation infrastructure, and neighborhood walkability and connectivity influence physical activity in adults.^{18,23–25}

Factors Specific to Life Transitions

Less is known regarding specific socioecological determinants of physical activity levels during life transitions or events. In a study of longitudinal changes in physical activity during the transition from adolescence into early adulthood, psychosocial variables, including perceived parental support of physical activity, perceived peer physical activity engagement, and self-regulatory skills, were associated with higher levels of physical activity.²⁶ In an investigation of changes in physical activity across the 5th to 7th grade transition, race and ethnicity modified the association between socioecological factors and the change in physical activity.¹³ For example, higher self-efficacy was associated with a smaller decline in physical activity in Black youth, whereas enjoyment of physical activity was associated with higher physical activity levels in Latinx youth.¹³ Environmental and occupational factors after graduating from high school also influenced physical activity; those working full time, not attending a 4-year college, and not living on campus were more likely to engage in physical activity the year after high school.²⁶ Better mental health, being more physically active pre-pregnancy, self-efficacy, enjoyment, lower perceived barriers, higher belief in the health benefits of physical activity, and fewer misconceptions related to risks of physical activity during pregnancy were associated with higher levels of prenatal physical activity.²⁷ A recent longitudinal study of 130 caregivers ≥ 60 years of age found that the caregiver's personal physical health and the number of hours of caregiving per week were predictors of physical activity levels.²⁸

Future research should continue to identify socioecological factors that support physical activity during life events or transitions. For example, providing safer streets for cyclists and pedestrians, rails-to-trails programs, and park upgrades can lead to increased physical activity for entire communities. Targeting evidence-based factors with individual counseling, focused interventions, and public health policies will help ensure the best chances for success in promoting increases or preventing declines in physical activity during life transitions or events.^{18,29} Distinguishing between leisure time and occupational physical activity may also be important.³⁰

Sedentary Behavior

Sedentary behavior is defined as waking, low-intensity behavior in a seated/reclined posture and is emerging as a distinct cardiovascular risk factor apart from not achieving enough moderate-to-vigorous intensity physical activity.^{3,31} High sedentary behavior is associated with cardiovascular disease and mortality, motivating the World Health Organization to recommend reducing sedentary behavior.^{3,32} The 2018 Physical Activity Guidelines for Americans added a recommendation to sit less and move more throughout the day.³ Cross-sectional

surveillance data reveal that sedentary behavior varies with age,³³ suggesting life transitions might affect sedentary behavior. Although the available research is less extensive than for physical activity, we summarize what is known about how sedentary behavior changes across transitions by age groups in the following sections.

Youth

Although surveillance data suggest that sedentary behavior is lowest in youth and increases through adolescence,³³ few studies have systematically quantified the variation in sedentary behavior over this key period. During school-level transitions from primary/middle to secondary/high school, there appears to be a trend toward an additional 10 to 20 minutes per day each year in accelerometer-measured sedentary time.¹¹ Transitioning from the high school to the university setting may be associated with less time spent in certain sedentary activities, such as watching television and playing video games, but is also associated with greater sedentary time while studying and socializing.³⁴ A longitudinal study of 13030 US youth indicated that sedentary behavior was generally stable during transitions from adolescence (<18 years of age) to young adulthood (18–26 years of age), although Black men and women were more likely to have greater screen time.³⁵

Adults

Sedentary behavior declines during young adulthood, then increases throughout midlife.³³ A systematic review of sedentary behavior correlates identified some life transitions as associated.²⁵ Occupation is a major determinant of sedentary behavior, with direct associations for desk jobs and indirect associations for manual jobs. As such, entering or exiting employment likely affects sedentary behavior, depending on job type. Marriage/cohabitation is not consistently associated with sedentary behavior, although having children/dependents is associated with a reduction in sedentary behavior. A longitudinal study of 5215 Australian adult women found that self-reported sitting time decreased after the birth of a child.³⁶ Other adult life transitions mentioned as possibly associated with higher sedentary behavior include pregnancy and major illness/injury.

Older Adults

Older adults are the most sedentary age group.³³ A systematic review suggested that total sedentary behavior decreases with retirement, although television time increases.³⁷ Conversely, major orthopedic injury (eg, hip fracture) is associated with high levels of objectively measured sedentary behavior.³⁸ Although minimally studied and a priority for future research, entering long-term care (eg, assisted living) likely increases sedentary behavior because of factors such as reduced household responsibilities and a social/physical environment that encourages sedentary behavior.³⁹

In conclusion, preliminary data indicate that life events and transitions also appear to affect sedentary behavior. Encouraging a sit less, move more strategy, for example, in adolescents and older adults, may be a useful supplemental strategy to maintain activity levels and cardiovascular health through transitions.

PART II. STRATEGIES TO SUPPORT PHYSICAL ACTIVITY IN PATIENTS AND POPULATIONS ACROSS LIFE EVENTS AND TRANSITIONS

Some life events or transitions, such as pregnancy, are easily identified and are associated with increased contact with health care professionals. For pregnancy, current guidelines explicitly state that obstetric clinicians should encourage physical activity and can use motivational interviewing to support physical activity during pregnancy and postpartum.⁴ Clinicians can also easily identify school-to-summer transitions in youth or other school-level transitions, including entry to middle/high school or university. Professional associations, such as the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists, support screening for some adverse life events, such as toxic childhood stress and intimate partner violence, during regular clinic visits.^{40,41} Recommendations from both associations refer to the adverse effects of these experiences on survivors' lifestyle behaviors but do not provide details specifically related to physical activity or sedentary behavior.^{40,41} Next, we provide suggestions for quantifying and promoting physical activity after a life event or transition has been identified.

Assessing Physical Activity in Clinical or Community Settings

An important initial step in promoting physical activity during the transition or event is to establish the current activity level and evaluate this level with respect to the 2018 Physical Activity Guidelines (Table 1). A recent American Heart Association scientific statement highlights the importance of and identifies strategies for assessing physical activity levels in health care settings.⁴² Organizational-level strategies include assessing activity levels when a patient checks in, when vital signs are collected, or as part of the rooming process. However, studies examining different processes for physical activity assessment found that completing a brief questionnaire at check-in only yielded a 27% response rate.⁴³ Integrating physical activity assessment in conjunction with screening for life transition and events into the electronic health record when vital signs are collected, and requiring responses to complete workflow, may be a more effective approach.⁴⁴ Standardizing physical activity assessment

along with life event and transition questions could enhance the ability of health care professionals to identify when a patient is at risk for decreasing physical activity (in addition to other adverse lifestyle changes). This can prompt physical activity counseling for patients experiencing risky life events and transitions.

Selecting the proper assessment tool depends on multiple factors, including the setting (clinic, school, office), level (monitoring individual progress versus evaluating organizational- or community-level trends), and assessment goals. Two forms of assessment especially appropriate for practitioners are (1) self-report, for example, questionnaires, and (2) wearable activity monitors, henceforth, wearables. When selecting the assessment type, clinicians and practitioners must consider the feasibility, practicality, accuracy, and sensitivity of the method given their situation.

Self-report measures of physical activity are a simple, low-cost option that can be implemented at scale and easily integrated into existing clinical encounters or community assessments. The length of questionnaires varies depending on the level of detail necessary on type, frequency, intensity, and duration of activity. However, for most situations in clinical or community settings, incorporating a brief 2-question tool at each encounter can determine compliance with the current aerobic 2018 Physical Activity Guidelines.⁴² For example, the "Physical Activity as a Vital Sign" document⁴⁵ requires <1 minute to administer and includes just 2 questions:

1. On average, how many days per week do you engage in moderate to strenuous exercise (like a brisk walk)?
2. On average, how many minutes do you engage in exercise at this level?

A moderate physical activity intensity level can be evaluated by using the talk test, where carrying on a conversation (but not singing) is possible while performing exercise. Another tool to gauge intensity is the rating of perceived exertion scale, where 0 is sitting and 10 is the greatest effort possible. On this scale, moderate-intensity activity would rate 5 to 6 and vigorous-intensity activity would correspond to a 7 to 8.³

Wearables, most often pedometers and accelerometers, have become popular. They provide objective information, such as steps and estimated minutes of physical activity at various intensity levels. Consumer-grade wearables are more widely adopted by the general population, less costly than research-grade devices, and provide data summaries in a more simplistic manner. Consumer-based wearables vary drastically in their accuracy, and estimates of duration of moderate-to-vigorous intensity physical activity, caloric expenditure, heart rate, and fitness level may not be reliable and valid enough to determine whether an individual is achieving the amount specified in the federal 2018 Physical Activity Guidelines.^{42,46} Steps per day have been shown to be the most

valid and reliable metric available from wearables.⁴⁶ Thus, focusing on steps per day as a proxy for activity levels is currently the best choice for assessing physical activity using consumer-based wearables. Although the current guidelines do not provide daily step recommendations, recent efforts have provided norm-referenced preliminary estimates of how many steps may be equivalent to the durations of moderate- to vigorous-intensity physical activity recommended by the guidelines^{7–9,47} (Table 1).

Another benefit of step monitoring using wearables is the opportunity to track incremental, longitudinal changes in activity using an easy-to-understand metric. An increase of 1000 steps per day can lead to health benefits.⁴⁸ Focusing on gradual and realistic increases in step count can be a powerful strategy for many individuals. Further efforts should champion the development of standardized software platforms into the electronic health record, where passive synchronization of patient-generated wearable physical activity data can provide concise, clinically meaningful metrics to facilitate patient-clinician interactions to assess and support physical activity.

Population-Specific Physical Activity Assessment

Pregnancy

Special consideration regarding reporting of physical activity intensity is warranted for pregnant women. Moderate-intensity physical activity is safe and recommended for most pregnancies,⁴ and perceived intensity should be the focus rather than absolute energy requirements or heart rate because of the physiological changes during pregnancy.

Older Adults

As aerobic capacity declines with age, older adults expend more energy than younger adults for the same activity. Therefore, perceived effort using the talk-test or ratings of perceived exertion are recommended to assess physical activity intensity in older adults. Practitioners should consider assessing participation in the multicomponent physical activities recommended in the federal 2018 Physical Activity Guidelines for older adults (balance, muscle strengthening, and aerobic activity), to help reduce the risk of falls and improve physical function.³

Physical Limitations

Like older adults, multicomponent activity assessment and recommendations may also be best for individuals with physical limitations, such as multiple sclerosis or stroke.

Chronic Diseases

In individuals with hypertension, diabetes, heart disease, frailty, and osteoarthritis, consultation with a health care professional is important for consideration of individual situations.

Inviting the Conversation Regarding Physical Activity

Health care professionals should express compassion and empathy as first-line treatment for life transitions and events. In addition, some life transitions and events may result in additional medical questions and concerns from the patient.⁹ Just as health care professionals would encourage the continuation of routines to control chronic conditions during these transitions, they can include specific encouragement for regular physical activity. The same principal holds in the context of public health practice, where existing initiatives to enhance physical activity participation in the broader community should also include targeted programs for life transitions across the life span. Not only are individuals capable of maintaining regular physical activity during a wide range of life transitions and life events, but there are also numerous mental and physical health benefits from starting and maintaining regular physical activity during these times.³ Advocating for regular physical activity, especially during life transitions and events, is an important adjunctive physical and mental health treatment to the compassion and empathy provided during challenging times.

Behavioral counseling in the health care setting is a recommended strategy for physical activity promotion.^{42,49,50} Health care professionals can be an important source of encouragement and should work to increase the patient's confidence in incorporating regular physical activity into their day by referring to past accomplishments, offering encouragement, and providing role models.^{42,50,51} Primary care physicians may lack time and resources to provide counseling and follow-up support, and expanding the role of other health care professionals (eg, medical assistants, nurses, health/lifestyle coaches) may help health care systems overcome time-related limitations.^{42,50} Adopting a patient-centered approach, such as using motivational interviewing,^{52,53} may be better received than a more traditional education approach during life transitions and events.

We provide some examples of patient-centered approaches that can be used to facilitate a conversation about maintaining or increasing physical activity during life transition and events (Table 3). Approaches to opening the conversation, offering insight, and facilitating problem solving are included. The suggestions can be applied to adult patients, parents and guardians of pediatric patients, and when talking directly with pediatric patients. Some approaches provide tailored support by integrating previous knowledge of the patient. Clinicians can also combine an approach for opening the conversation with an approach for offering insight, for example, "I know you have a lot going on. Are you able to do some of the things that you have enjoyed in the past, like exercise? [if yes] That is great. How is it going? [if no] Can I share with you some information I learned from a recent American

Table 3. Strategies for Discussing Physical Activity During Life Transitions and Life Events

Audience	Strategy
Opening the conversation	
Adult	It sounds like there is a lot going on.
	I imagine it does feel overwhelming with all that you have going on.
	Often [event]* can be very demanding. How might you carve out a few minutes to take time for yourself?
	In what small ways could you possibly take time out for yourself?
	You used to enjoy [taking walks]* daily. Is that something you have been able to do for yourself?
Parent	You are asking some good questions, and it sounds like you want to make sure [your child]* is healthy.
	How do you feel [your child]* is doing with [the life event]*?
	Given a family history of [diabetes, high blood pressure],* what concerns do you have about [your child's]* long-term health?
Child	This is a big step [at school, into summer].* Is there anything you are worried about? What are you looking forward to?
	It sounds as though you like your [tablet/screen time].*
Offering insight†	
Adult	Would it be useful if I offered you some examples of what others have found helpful during situations like this?
	May I share with you some strategies others have found helpful in situations like this?
	I know you are overwhelmed with [events]*. There is research that suggests that 20 min of physical activity, such as [a brisk walk],* is associated with better mental and physical health. What do you make of that information?
	We all like being able to make some of our own decisions. In what ways is [your child]* physically active? What are some activities that they might enjoy?
Parent	I don't know if you are aware of these: The AHA has free exercise videos, and some of them are family oriented. ⁵⁴ What do you think about checking them out?
	There is a great website with tips for getting children to be active. Is that something you would find helpful? ⁵⁵
	I know you are overwhelmed with [events]*. There is research that suggests that 20 min of physical activity, such as [a brisk walk],* is associated with better mental and physical health. What do you make of that information?
	What do you think about doing family activities, like going for a walk or taking a hike? Or maybe you've got other ideas of how to be active together.
	I recognize that doing something physical as a family will take more of your time. Are there sports or activities [your child]* is allowed to do on their own?
	Would you be interested in strategies that have been helpful for other parents?
Child	It sounds like you use your [tablet].* Did you know there are exercise videos just for kids like you?
	If you were going to be physically active for 30 min tomorrow, what would you like to do?
	I can tell you some things other kids enjoy for exercise if you'd like. More importantly, what might you want to do?
Facilitating problem solving	
Adults	Sounds like you are open to exercising. What thoughts do you have, or would you like some help coming up with a plan?
	What do you think about taking a 10- to 20-min [walk]* each day? When can you imagine fitting that in?
	Given your current circumstances, if you decided to take a 20-min [walk]* [3 d a wk or every day],* when would be the easiest time to fit it into your day?

*Brackets were used to invite tailoring the communication to the patient.

†You can often pair an opening with an offer to provide insight.

Heart Association statement?" Every individual's situation is unique and assisting those facing life events requires compassion and understanding. A patient-centered discussion about physical activity could help your patient better cope with their life transition or event and help maintain or improve their cardiovascular health.

Organizational and Community-Based Promotion of Healthy Physical Activity Levels

Individual practitioners can implement physical activity assessment and promotion into their personal routines

and practices. Combined organizational and public health level efforts may require more effort but have the potential to induce a bigger impact through the wider reach of such efforts.^{56,57} Addressing physical activity within organizations or communities addresses social support and cultural norms, which are important interpersonal components of the socioecological model linked to physical activity. The same social support and norms might help individuals cope with life transitions or events. Schools, workplaces, faith communities, and assisted living centers that are associated with life events and transitions could encourage regular assessment of physical activity,

and assessment may serve as a conversation starter to help promote an active lifestyle during life events and transitions. Routine physical activity assessment may support activity through self-monitoring, awareness, and tailored physical activity recommendations, and enabling individuals and practitioners to detect when a life transition or event resulted in changes in physical activity and prompt further counseling or interventions. Because the built environment influences physical activity,²⁹ policy makers should keep physical activity opportunities in mind during planning.

Resources for Supporting Physical Activity

High-quality resources for physical activity promotion during life transitions and events are available to individuals and practitioners. Because the COVID-19 pandemic vastly altered the physical activity routines and resources available to individuals worldwide, many newer, online resources were recently developed by reputable organizations to encourage physical activity for individuals and families in home-based or outdoor settings. Such resources will also be useful to individuals experiencing other life events and transitions that affect their usual physical activity habits, such as the ability to exercise in a gym or with others. The American College of Sports Medicine Exercise is Medicine Initiative provides a host of resources for physical activity, including a COVID-19 and exercise page (available for adults and children in English and multiple other languages), physical activity as a vital sign measure, coding and billing tips for health care professionals, and exercise prescription pads.⁵⁸ Useful tools and resources are included in [Table I in the Supplemental Material](#). Many of these tools are user-friendly, online web portals and evidence-based intervention repositories that are available and free of charge. These online resources continually update their offerings. Clinicians may also consult Chapter 11 of the *2018 Federal Physical Activity Guidelines for Americans Committee Scientific Report*, a compilation of stringently reviewed physical activity promotion strategies and approaches across a variety of settings and populations.⁵⁹

CONCLUSIONS

Many life events and transitions have been associated with changes in cardiovascular health—promoting physical activity and possibly sedentary behavior. Emerging

but limited evidence suggests subgroup differences in the likelihood and correlates of changing physical activity behaviors in response to life events and transitions. Clinicians should express compassion as they ask about life transitions and initiate conversations about physical activity during life events and transitions. Health care professionals can assess physical activity by using simple questions or wearable devices and incorporate assessment results into electronic health records. Free, online resources for tailored physical activity promotion are available and provided herein. Areas in need of research include improved surveillance efforts to evaluate physical activity and corresponding health and wellness among underserved groups, better characterization of the effects of life events and transitions on sedentary behavior, and detailed descriptions of correlates of physical activity change during life events and transitions. Targeted testing of interventions across the socioecological spectrum that combat declines in physical activity specifically during life events and transitions is needed to improve life-long physical activity patterns and cardiovascular health.

ARTICLE INFORMATION

The American Heart Association makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

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Disclosures

Writing Group Disclosures

Writing group member	Employment	Research grant	Other research support	Speakers' bureau/honoraria	Expert witness	Ownership interest	Consultant/advisory board	Other
Abbi D. Lane-Cordova	University of South Carolina	American Heart Association (Career Development Award)†; NIH/NIGMS (COBRE Pilot funding)*	None	None	None	None	None	None
Bethany Barone Gibbs	University of Pittsburgh	None	None	None	None	None	None	None
Eduardo Esteban Bustamante	University of Illinois at Chicago, College of Applied Health Sciences Kinesiology and Nutrition	None	None	None	None	None	None	None
Gerald J. Jerome	Towson University	None	None	None	None	None	None	None
Michael J. LaMonte	University at Buffalo - SUNY	None	None	None	None	None	None	None
Amanda E. Paluch	University of Massachusetts	None	None	None	None	None	None	None
Russell R. Pate	University of South Carolina Exercise Science Public Health Research Center	None	None	None	None	None	None	None
R. Glenn Weaver	University of South Carolina, Arnold School of Public Health	None	None	None	None	None	None	None
Kashica J. Webber-Ritchey	DePaul University School of Nursing	None	None	None	None	None	None	University (assistant professor)†

This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all members of the writing group are required to complete and submit. A relationship is considered to be "significant" if (a) the person receives \$10 000 or more during any 12-month period, or 5% or more of the person's gross income; or (b) the person owns 5% or more of the voting stock or share of the entity, or owns \$10 000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

*Modest.

†Significant.

Reviewer Disclosures

Reviewer	Employment	Research grant	Other research support	Speakers' bureau/honoraria	Expert witness	Ownership interest	Consultant/advisory board	Other
William E. Kraus	Duke University Medical Center	None	None	None	None	None	None	None
Carl J. Lavie Jr	Ochsner Medical Center	None	None	None	None	None	None	None
Mark A. Williams	Creighton University School of Medicine	None	None	None	None	None	None	None

This table represents the relationships of reviewers that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all reviewers are required to complete and submit. A relationship is considered to be "significant" if (a) the person receives \$10 000 or more during any 12-month period, or 5% or more of the person's gross income; or (b) the person owns 5% or more of the voting stock or share of the entity, or owns \$10 000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

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