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Future Perspective and Healthy Lifestyle Choices in Adulthood

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Regardless of age, making healthy lifestyle choices is prudent. Despite that, individuals of all ages sometimes have difficulty choosing the healthy option. We argue that individuals' view of the future and position in the life span affects their current lifestyle choices. We capture the multidimensionality of future thinking by assessing 3 types of future perspective. Younger and older men and women ($N = 127$) reported global future time perspective, future health perspective, and perceived importance of future health-related events. They also rated their likelihood of making healthy lifestyle choices. As predicted, older participants indicated greater intention to make healthy choices in their current life than did younger participants. Compared to younger participants, older participants reported shorter global future time perspective and anticipated worse future health but perceived future health-related events as more important. Having a positive view of one's future health and seeing future health-related events as important were related to greater intention to make healthy lifestyle choices, but greater global future time perspective was not directly related to healthy choices. However, follow-up analyses suggested that greater global future time perspective indirectly affected healthy choices via a more positive view of future health. None of these relations were moderated by age. Individuals' perspective on the future is shown to be an important multidimensional construct affecting everyday healthy lifestyle choices for both younger and older adults. Implications for encouraging healthy choices across the adult life span are discussed.

Keywords: lifestyle choices, future perspective, time, health, decision making

Should I supersize the French fries? Should I go for a bike ride? Individuals make such choices in their daily lives and thereby create a lifestyle that promotes or interferes with their health. Healthy lifestyle behaviors such as eating well, engaging in exercise, and reducing stress are contributors to good health and successful aging (Mather, 2006). Commitment to a healthy lifestyle is important in the early phase of adulthood when emerging adults begin making independent lifestyle choices outside of the parental context. Choices made at this time can set in motion a health trajectory that becomes evident over time (e.g., negative health consequences occur only after decades of smoking or of being sedentary). Making healthy choices also remains crucial, however, later in life (Finucane, Mertz, Slovic, & Schmidt, 2005; Löckenhoff & Carstensen, 2004). The consequences of unhealthy behaviors may be more immediate in late life, as older compared to younger adults are more vulnerable physically, cognitively, and socially (Mather, 2006; Mustafić & Freund, 2012; Nyberg, Lövdén, Riklund, Lindenberger, & Bäckman, 2012).

Although the benefits of everyday health behaviors are well known (Hwang, 2010), neither younger nor older individuals always choose the healthy option. A host of factors may influence the choice to engage in healthy lifestyle behaviors (Paulus, 2005). The present study examined individuals' perspective on the future as a developmental construct that should contribute to lifestyle choices across the adult life span.

Multiple Types of Future Perspective and Healthy Lifestyle Choices

The majority of past research has examined future perspective across adulthood using a scalar assessment of global future time perspective (FTP; Carstensen & Lang, 1996). In this research, we expand the conceptualization of future perspective to reflect multiple dimensions on which individuals consider their future in everyday life. We examined three types of future perspective. Global future time perspective (Carstensen & Lang, 1996; Löckenhoff & Carstensen, 2004) involves the salience of future time left to live. Domain-specific future perspective refers to expectations about the future in a certain life domain, in this case in the health domain (Staudinger, Bluck, & Herzberg, 2003). It concerns

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beliefs about how life will be in the future in a given domain. Perceived importance of future health-related events (Botzung, Denkova, & Manning, 2008) refers to the value placed on future health activities. We propose that these three types of future perspective may contribute, independently or in tandem, to healthy lifestyle choices.

Global Future Time Perspective

Global future time perspective involves an individual's sense of how open-ended and positive the future will be (Löckenhoff & Carstensen, 2004). Those who have a more open-ended sense of the future, who feel positive about future possibilities, may be more motivated to make healthy choices (Gellert, Ziegelmann, Lippke, & Schwarzer, 2012; Visser & Hirsch, 2014). Having a seemingly long future ahead should motivate them to make healthy choices. In line with self-regulatory theory (Bandura, 1997; Stine-Morrow, Shake, Miles, & Noh, 2006), global future time perspective may prompt motivational strivings that manifest in individuals' tendency to engage in behaviors that reduce disparity between the current and desired self. For example, Gellert et al. (2012) showed that more open future time perspective was related to healthy behaviors in adults of different ages.

The present research extends Gellert et al. (2012) in two ways: the variety of health behaviors assessed and the multidimensional measurement of future perspective. Gellert et al. focused on only two health behaviors (i.e., fruit and vegetable consumption, physical exercise), assessed with one or two self-report items. As such, their findings cannot be generalized to other lifestyle behaviors. In contrast, the present study examined effects of future perspective on a range of lifestyle behaviors, including both positively framed (e.g., visiting doctor if concerned, relaxing when stressed) and negatively framed (e.g., skipping exercise, eating fried food) activities. Further, Gellert et al. conceptualized future time perspective as unitary, distal, and behavior-generic while our conceptualization considered three types of future perspective.

In terms of adult development, research suggests that younger adults view their future as open-ended (Demiray & Bluck, 2014) while older adults have a more time-limited view of their future (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Jiang, Fung, Sims, Tsai, & Zhang, 2016; Spreng & Levine, 2006). These age differences make sense given individuals' place in the life span. However, beyond mean-level age differences, the effect that global future time perspective has on making healthy choices may also vary by age. In particular, younger adults perceive an open-ended future (i.e., stretching out almost to immortality) and have a developmental focus on growth and improvement (Ebner, Freund, & Baltes, 2006). How younger adults view the future may not, however, be salient in the health domain. Thus, global future time perspective may not be as influential on younger adults' health choices. In other words, younger adults typically, and quite reasonably, view their future health positively. Given that, their future thinking may focus instead on imminent, age-relevant goals such as career aspirations or family building (Frazier, Hooker, Johnson, & Kaus, 2000; Hooker & Kaus, 1994; Nurmi, 1992). Their future health may not seem as important as these other age-graded developmental tasks (Heckhausen, Wrosch, & Schulz, 2010). In contrast, global future time perspective should be very salient for older adults' healthy choices, given that late life normatively involves health losses. Thus, we propose that, to the extent that older adults can maintain an open sense of their future, they should be motivated more than younger adults to engage in healthy lifestyle behaviors.

Domain-Specific Future Perspective

Beyond a global view of how much time there is left in one's life, individuals also hold beliefs about what their future will bring in a variety of life domains (Hooker & Kaus, 1994; Ko, Mejia, & Hooker, 2014; Staudinger et al., 2003). The current research focused on the health domain. Current choices individuals make may be guided by hopes and fears for the future (Hooker & Kaus, 1994; Ko et al., 2014; Sarkisian, Prohaska, Wong, Hirsch, & Mangione, 2005). For example, domain-specific future expectations guide how individuals set and make progress toward goals (Ko et al., 2014), and future expectations can predict health-related behaviors (Hooker & Kaus, 1994). Further, holding the perspective that one's future will be healthy is positively associated with engaging in physical activity (e.g., swimming, bicycling; Sarkisian et al., 2005) and seeking health care when needed (Sarkisian, Hays, & Mangione, 2002). We therefore argue that individuals who hold a positive view of their future in the health domain will be motivated to make healthier choices: if individuals believe that positive future health is possible, they will be more likely to try to render that belief a reality.

Younger and older individuals see their future health quite differently. Given that younger adults normatively have less disease and fewer chronic conditions than older adults, they should have a more positive view of their future health. In contrast, older adults anticipate losses in the future across multiple domains of functioning (Ebner, Riediger, & Lindenberger, 2009; Mustafić & Freund, 2012). This has been borne out in large representative samples. Staudinger et al. (2003) asked younger and older adults to rate their future in six life domains, including health. While younger adults expected their health to improve in the next 10 years, older adults expected a decline in their health over the same period. Younger adults also see their physical functioning as more controllable than do older adults (Mustafić & Freund, 2012). In short, younger people see their future health more positively than older adults.

Aside from these expected mean-level age-group differences, however, we propose that the influence of future health perspective on one's current lifestyle choices may also differ by age. Older adults likely anticipate losses when considering their future health, whereas younger adults typically anticipate stability of their good health. Future health expectations may thus be particularly influential on older adults' healthy choices and less relevant for those of younger adults, at least in the short to midterm future. If older adults perceive that aging brings inevitable decline (Newby-Clark & Ross, 2003), they may be convinced that good health is not achievable, regardless of current health choices (Mustafić & Freund, 2012). However, to the extent that older adults can maintain a positive view of their future health, despite knowledge that aging involves losses, they should be motivated to make healthy choices (Demiray & Bluck, 2014). We therefore propose that maintaining a positive view of one's future health should be relevant in guiding healthy choices overall, but particularly for older adults.

Perceived Importance of Future Health-Related Events

The third type of future perspective is perceived importance of future health-related events. In daily life, thinking about the future often involves mentally traveling forward to a specific time (Anderson & Dewhurst, 2009). Specific imagined events include unique kinds of information that may be used to guide choices (Mather, 2006). As such, we also assessed importance of specific future events during mental time travel to the future: one source of motivation for making healthy choices is the value placed on future health-related events. That is, seeing going to the gym or maintaining a healthy diet as important in one's life, and as likely to impact one's health, should motivate engagement in such activities.

Older adults may be keenly aware of the importance of engaging in healthy activities, considering the effects of health status in later life on major issues such as mobility and independent living (Paterson & Warburton, 2010). Their own life experience with health issues and exposure to peers who have faced health concerns (Chatterji, Byles, Cutler, Seeman, & Verdes, 2015) may further validate older adults' sense of the importance of a healthy lifestyle. To the extent that younger adults can also see the importance of engaging in healthy activities, however, they should be motivated to make healthy lifestyle choices (Ebner et al., 2006). That is, the relation of seeing future health-related events as important and the tendency to engage in healthy lifestyle behaviors seems likely to operate at all ages.

The Present Study

Previous studies have examined relations between global future time perspective and current health and well-being across adulthood (Demiray & Bluck, 2014; Gellert et al., 2012). Our multidimensional conceptualization of future perspective provides a more nuanced picture of how the future is substantiated in individuals' mental life. Three types of future perspective were examined in relation to younger and older individuals' intention to make everyday healthy lifestyle choices.

Specific Aims and Hypotheses

The three central study aims were to:

1. Determine age-group differences in current healthy lifestyle choices. Older adults may be more prudent in making choices that positively affect their health. Compared to younger adults whose focus is on growth and exploration, even to the extent of engaging in risky behavior, older adults may maintain a more measured stance toward their health (see Rieger & Mata, 2015; Rolison, Hanoch, & Wood, 2012, for similar age differences in financial risk-taking). Therefore, we predicted that older participants would make healthier lifestyle choices than younger participants (Hypothesis 1).

2. Identify age-group differences in multiple types of future perspective. The majority of past research has examined only one type of future perspective in a single study. Individual studies have shown that older compared to younger adults have relatively shorter global future time perspective (Löckenhoff & Carstensen, 2004) and anticipate more future problems in the health domain (Ebner et al., 2006; Hooker & Kaus, 1994) but value the importance of their health more (Depping & Freund, 2011). Examining these types of future perspective in tandem, we predicted that older compared to younger participants would perceive their global future time as less open-ended (Hypothesis 2a) and see their future health as less positive (Hypothesis 2b) but perceive future health-related events as more important (Hypothesis 2c).

3. Determine effects of multiple types of future perspective on current healthy lifestyle choices and whether such effects are moderated by age. The final, most novel, aim was to examine whether each of the three types of future perspective influenced healthy lifestyle choices and whether such effects varied by age. We predicted that having a more open-ended global sense of future time (Hypothesis 3a) and more positive future expectations in the health domain (Hypothesis 3b) would be associated with greater intention to make healthy lifestyle choices. Further, we predicted that any obtained effects of global future time perspective and future health expectations on healthy choices would be particularly pronounced in older compared to younger participants. The rationale for this was that older relative to younger individuals' views of the future may be more relevant for making lifestyle choices in the health domain because the consequences of ill health are more immediate in old age. Younger adults normatively have quite robust health and view their future health as extended, positive, and stable. Finally, we predicted (Hypothesis 3c) that perception of future health-related events as more important would be associated with greater intention to make healthy lifestyle choices, and that perceived importance would motivate healthy choices regardless of age.

Method

Participants

Seventy-eight younger adults (M = 19.9 years, SD = 2.6; 53% female; range = 18–34 years) were recruited through the university's participant pool and compensated with course credit. Forty-nine older adults (M = 73.2, SD = 9.1 years; 54% female; range = 60–93) participated and were compensated financially. Healthy, community-dwelling older adults were recruited through existing participant registries and outreach through senior centers, churches, and other community venues. One additional older adult was recruited and tested but excluded from analyses for inability to follow instructions. All participants were native English speakers.

The sample showed typical self-reported health across age groups. Specifically, younger (M = 7.73, SD = 1.57) and older (M = 7.63, SD = 1.85) participants self-reported comparable general current physical health, $t(115) = 0.32$, $p = .750$, $d_{Cohen} = -0.06$, 95% CI [−0.43, 0.31]. Comparable subjective general physical health between younger and older adults has been reported before in similar studies and populations (Ebner et al., 2009; Huxhold, Fiori, & Windsor, 2013; Kaplan & Baron-Epel, 2003). However, suggesting better health condition in younger compared to older participants in our sample, there was a significant association between age group and incidence of high blood pressure, $\chi^2(1) = 38.52$, $p < .001$, as well as incidence of high blood cholesterol, $\chi^2(1) = 24.52$, $p < .001$. Based on the odds ratios, odds of reporting high blood pressure was 26.77 times higher and odds of high blood cholesterol was 12.88 times higher for older than younger participants. Further, self-reported vision

without glasses or contacts was lower for older participants (M = 5.35, SD = 2.38) than for younger participants (M = 6.66, SD = 2.65), $t(108) = 2.58$, $p = .011$, $d_{Cohen} = 0.40$, 95% CI [0.11, 0.80]. Similarly, self-reported hearing without aid was lower for older participants (M = 7.36, SD = 2.15) than for younger participants (M = 8.97, SD = 1.08), $t(99) = 5.01$, $p < .001$, $d_{Cohen} = 1.04$, 95% CI [0.61, −1.47].[1]

The study sample also showed typical patterns of cognitive and affective functioning across age groups. Vocabulary scores of younger participants (M = 13.61, SD = 3.47) were lower than those for older participants (M = 18.27, SD = 4.67), $t(125) = -6.43$, $p < .001$, $d_{Cohen} = 1.18$, 95% CI [0.79, 1.57]. Younger participants (M = 7.64, SD = 1.72) outperformed older participants (M = 5.25, SD = 1.66) on immediate verbal recall scores, $t(123) = 7.64$, $p < .001$, $d_{Cohen} = 1.41$, 95% CI [1.01, 1.81]. Current positive mood of younger participants (M = 33.91, SD = 7.38) was lower than that of older participants (M = 37.50, SD = 6.00), $t(125) = -2.85$, $p = .008$, $d_{Cohen} = 0.52$, 95% CI [0.15, 0.89], and current negative mood of younger participants (M = 19.94, SD = 6.04) was higher than that of older participants (M = 16.77, SD = 6.81), $t(125) = 2.73$, $p = .007$, $d_{Cohen} = 0.50$, 95% CI [0.13, 0.87].

Procedures

The current study was conducted as a part of a larger project. Only variables relevant to the current project are described here. Data were collected in two sessions. The first session lasted about 20 minutes and was telephone-administered. Participants gave verbal informed consent, provided demographics, indicated health status (e.g., pertaining to high blood pressure and cholesterol, vision and hearing), and completed the Future Health Perspective measure (Staudinger et al., 2003). Two to 10 days later, the second session took place in person in a quiet room on the university campus. After written informed consent, participants completed the newly developed Healthy Lifestyle Choices task, which included mental time travel, making lifestyle choices, and rating the importance of imagined future events. Participants then responded to the global Future Time Perspective scale (FTP; Carstensen & Lang, 1996). They also completed brief sample-descriptive cognitive and affective measures. At the end of the session, participants were debriefed.

Measures

Next, major study variables including the three types of future perspective are described, followed by the assessment of healthy lifestyle choices. We also provide a short summary of demographic, health, cognitive, and affective sample-descriptive measures.

Global future time perspective. The 10-item FTP (Carstensen & Lang, 1996) assesses how open-ended and full of opportunity one perceives one's overall future (e.g., As I get older, I begin to experience that time is limited; Many opportunities still lie ahead of me). Each item was rated on a Likert scale from 1 = *very untrue* to 7 = *very true*. Global future time perspective was computed as the mean score across the 10 items. Higher scores indicated an open-ended future. Internal consistency was excellent, $\alpha = .93$.

Future perspective in the health domain. Future health perspective was assessed using a 3-item subscale from the Midlife Development in the U.S. Survey (MacArthur & MacArthur, 1998), following procedures outlined in Staudinger et al. (2003). Participants rated their perceived overall physical health, emotional health, and fitness level 5 years in the future using a Likert scale ranging from 1 = *worst possible* to 11 = *best possible* expectation of their future. Participants' future health perspective was computed as the mean score across the three items. Higher scores represented expectations of a healthier future. Internal consistency was good, $\alpha = .80$.

Perceived importance of future health-related events. Importance of future health-related events was assessed in relation to the specific future events participants imagined during mental time travel. Thus, these ratings were integrated into the Healthy Lifestyle Choices task (described next; see Phase 4, Figure 1). Participants rated the importance (i.e., How important is this event to you?; Bluck, Levine, & Laulhere, 1999) of 16 specific health-related future events that they had generated and elaborated in mental time travel. Participants provided ratings on a Likert scale from 1 = *not at all important* to 4 = *very important*. Perceived importance of future health-related events was calculated as the mean of all 16 importance ratings. Internal consistency was acceptable, $\alpha = .72$.

Healthy lifestyle choices. The Healthy Lifestyle Choices task was developed for this study. To ensure a comprehensive set of items on which individuals could make choices, items were taken from three sources: the Healthy Lifestyle Questionnaire (Corbin, Welk, Corbin, & Welk, 2011), the Health Enhancement Lifestyle Profile Screener (HELP; Hwang, 2010), and the Health-Promoting Lifestyle Profile-II (HPLP-II; Walker & Hill-Polrecky, 1996). Five life domains were represented in the final set of items: exercise, social experiences, nutrition, hobbies and leisure, and health and hygiene. All items in the final set, listed in Table 1, were tested to ensure that they were age-relevant, easy to understand, and that the healthier choice was unambiguous (see Appendix for details).

Figure 1 illustrates the trial sequence of the Healthy Lifestyle Choices task with a sample item. Sixteen trials in the task referred to future health-related events, and lifestyle choice items were counterbalanced across participants. Each trial had four phases, and the perceived importance ratings of future health-related events were made in the final phase (Phase 4; see description above). Although part of the same task, the perceived importance ratings of future health-related events and the healthy lifestyle choices were conceptualized as distinct

[1] Due to technical errors (e.g., computer malfunction), some participants' data pertaining to demographics and current health status were not saved. Specifically, the following data was lost: ratings of general physical health for nine younger and three older participants; ratings of vision without glasses or contacts for nine younger and eight older participants; ratings of hearing without aid for 14 younger and 12 older participants; ratings of high blood pressure and high blood cholesterol for eight younger and two older participants. Results of separate multivariate ANOVAs suggested groups of participants with and without these ratings did not differ in estimated multivariate means for global future time perspective, future health perspective, perceived importance of future health-related events, and healthy choices.

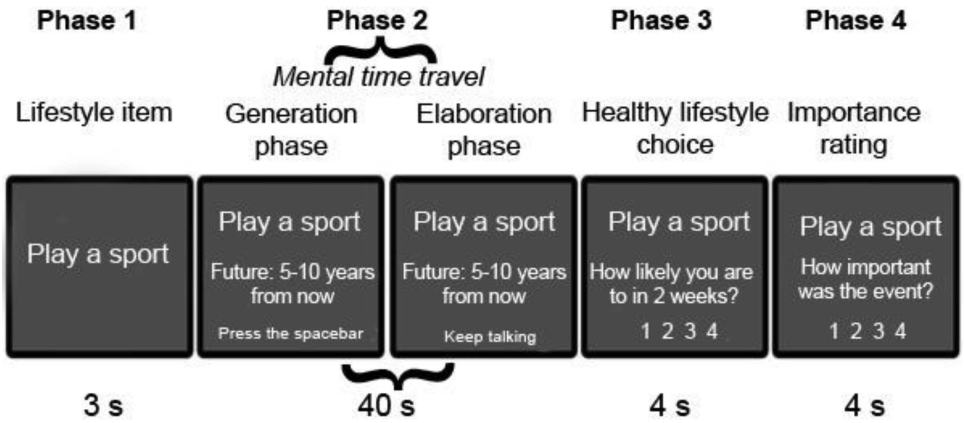

Figure 1. Sample item for the Healthy Lifestyle Choices Task showing trial sequence and timing

constructs, as empirically supported in our data (see Table 2).[2] Before starting the task, participants were provided instruction on what mental time travel involves and completed practice items.

Phase 1: Presentation of lifestyle item. Each trial started with the presentation of a lifestyle item for 3 seconds (e.g., play a sport). This phase did not involve making a choice but was used as a cue for mental time travel in the next phase.

Phase 2: Mental time travel generation and elaboration. Participants used the healthy lifestyle choice item as a cue to generate (i.e., bring to mind) and then elaborate on (i.e., talk aloud about) a future personal event that they might perform 5–10 years in the future. Participants pressed a key when they had identified a specific event to imagine (generation phase). For the remaining time, they then elaborated on (elaboration phase) this specific future event. The total time allotted for event generation and elaboration was 40 seconds, based on previous literature (Addis, Wong, & Schacter, 2007) and pilot testing.

Phase 3: Healthy lifestyle choice. Next, the lifestyle choice item was presented again for 4 seconds. This time, participants were asked to make a lifestyle choice: to indicate how likely they were to engage in that specific lifestyle activity in the next 2 weeks (Likert scale from 1 = *not at all likely* to 4 = *very likely*). Participants were instructed to make their choice considering that they were in the midst of a busy time and had to prioritize activities. This instruction was given to avoid ceiling response rates and to assure that participants made these choices under conditions typical for everyday life. That is, most people want to make healthy choices but may not always do so because of time constraints. A healthy lifestyle choices score was calculated as the mean of all 16 lifestyle choices (i.e., likelihood ratings). As applicable, items were reversed, so that higher scores represented healthier lifestyle choices.

Demographics and current health. The demographics questionnaire assessed information such as age. In addition, among other variables, participants indicated their current general physical health status on a Likert scale from 0 = *poor* to 10 = *excellent*, vision without glasses or contacts as well as hearing without aid on the same scale, and whether they were diagnosed with high blood pressure and/or cholesterol.

Table 1
List of Positive and Negative Lifestyle Items in the Healthy Lifestyle Choices Task

Positive Lifestyle Items (n = 28)	Negative Lifestyle Items (n = 16)
Go jogging or hiking	Skip dinner
Visit with family	Put off important conversation
Challenge yourself	Reduce volunteer work
Stay active	Skip exercise
Visit doctor if concerned	Eat fried food
Talk to those close to you	Sit watching TV
Visit with friends	Exercise less
Check food expiration date	Be stuck in a rut
Try something new	Rush through day
Do strength exercise	Get road rage
Read popular health information	Drink soda
Read food labels	Increase alcohol use
Maintain close friendships	Skip flossing
Eat three meals a day	Buy fast food
Monitor your health	Put off going to doctor
Play a sport	Over exercise
Practice meditation	
Attend health seminar	
Pace yourself	
Read a book	
Eat whole grains	
Do volunteer work	
Eat vegetables	
Go swimming	
Running or do aerobics	
Be supportive	
Engage in hobby	
Relax when stressed	

[2] Importance of future health-related events referred to a participant's evaluation of the personal importance of the specific future health event he or she generated and elaborated on as cued by a specific lifestyle item during the Healthy Lifestyle Choices task. In contrast, healthy choices referred to the self-rated likelihood of engaging in the specific lifestyle activity during the course of the next two weeks. That is, these two variables, though assessed via self-report within the same task and both related to specific lifestyle items, measured different constructs, as also supported by their noncollinearity summarized in Table 2.

Table 2
Intercorrelations (Bivariate) and Means For Central Study Variables For Younger and Older Participants

Variable	1	2	3	4	Younger *M* (*SD*)	Older *M* (*SD*)
1. Global future time perspective	—	.27*	.30**	.27*	5.47 (0.97)	3.81 (1.52)
2. Future health perspective	.58***	—	.22*	.46**	8.56 (0.94)	7.76 (1.44)
3. Importance of future health-related events	.31*	.40**	—	.42**	2.68 (0.49)	3.09 (0.34)
4. Healthy lifestyle choices	.38**	.47**	.17	—	2.75 (0.38)	2.95 (0.37)

Note. Above diagonal: intercorrelations for younger participants ($n = 79$); below diagonal: intercorrelations for older participants ($n = 49$).
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Cognitive and affective functioning. Tests of vocabulary (Modified Nelson-Denny; Brown, 1960) and immediate verbal recall (Rey Auditory Verbal Learning Test; RAVLT; Lezak, 1995) were administered. For the Nelson-Denny, participants completed sentences by selecting the best word presented among five alternatives. A total vocabulary score was calculated as the sum of correct answers. For the RAVLT, participants listened to a list of words and wrote down all the words they remembered. The total score was the number of words correctly recalled. Positive and negative affect was measured by the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Adjectives were rated on a Likert scale from 1 = *very slightly or not at all* to 5 = *extremely*. Positive mood was calculated as the mean across all positive adjectives and negative mood as the mean across all negative adjectives on the checklist.

Results

Analytic Strategy

We conducted independent samples *t* tests to examine age-group differences in healthy lifestyle choices (Aim 1) and in each of the three types of future perspective: global future time perspective, future health perspective, and perceived importance of health-related future events (Aim 2). To address Aim 3, we conducted a multiple linear hierarchical regression analysis to specify the extent to which the three types of future perspective contributed to variance in healthy choices, after accounting for the influence of age. We further tested whether these effects were moderated by age.

Prior to data analyses, data were screened for data-entry errors, missing data, and outliers. All data analysis was conducted using IBM SPSS version 22. To test our hypotheses and establish a statistical basis for our regression model, we conducted a series of preliminary analyses. Bivariate correlations for younger and older participants were initially conducted to confirm the relation between future thinking variables and healthy lifestyle choices, verifying that the magnitude of their associations was acceptable for our model (e.g., not multicollinear; see Table 2). Regression assumptions (i.e., independence of errors, homoscedasticity, linearity, multicollinearity, normality of residuals) were met, and no influential cases were identified.

Aim 1: Age-Group Differences in Healthy Lifestyle Choices

As expected (Hypothesis 1), older participants ($M = 2.95$, $SD = 0.37$) made healthier lifestyle choices than younger participants ($M = 2.75$, $SD = 0.38$), $t(125) = -2.86$, $p = .005$, $d_{Cohen} = 0.53$, 95% CI [0.17, 0.90] (see Figure 2).[3]

Aim 2: Age-Group Differences in Multiple Types of Future Perspective

We compared younger and older participants across the three types of future perspective. Supporting Hypothesis 2a, older participants ($M = 3.81$, $SD = 1.52$) had less open-ended global future time perspective than younger participants ($M = 5.47$, $SD = 0.97$), $t(125) = 7.50$, $p < .001$, $d_{Cohen} = 1.38$, 95% CI [0.98, 1.77]. Supporting Hypothesis 2b, older participants ($M = 7.76$, $SD = 1.44$) reported their future health as lower than younger participants ($M = 8.56$, $SD = 0.94$), $t(122) = 3.78$, $p < .001$, $d_{Cohen} = 0.70$, 95% CI [0.32, 1.07].[4] Supporting Hypothesis 2c, older participants ($M = 3.09$, $SD = 0.34$) rated the importance of personal future health-related events as greater than did younger participants ($M = 2.68$, $SD = 0.49$), $t(125) = -5.14$, $p < .001$, $d_{Cohen} = 0.93$, 95% CI [0.56, 1.31] (see Figure 2).[5]

[3] Some (6.2%) of the item responses for healthy choices across the sample were missing (e.g., participants did not provide a choice for that item). In total, 49.6% of participants had complete data for all items, 25.0% were missing one response, 12.6% were missing two responses, and 12.7% were missing three or more responses, and none was missing more than eight responses. Little's MCAR test (Little, 1988) suggested that the data were missing completely at random, $\chi^2(587) = 593.21$, $p = .42$. Further, participants with or without missing responses did not differ in their healthy lifestyle choices, $t(125) = -0.18$, $p = .21$.

[4] Three older participants did not complete any items of the future health perspective measure and were thus omitted from this analysis.

[5] Some (4.0%) of importance ratings were missing; 62.2% of the participants had no missing responses; 22.8% were missing one response, 10.2% were missing two responses, 4.8% were missing three or more responses, and none was missing more than seven responses. Little's MCAR test suggested that the data were missing completely at random, $\chi^2(404) = 405.02$, $p = .476$. Further, participants with or without missing responses did not differ in their importance ratings of future health-related events, $t(125) = -1.40$, $p = .164$, nor did they differ in any of the other future perspective variables.

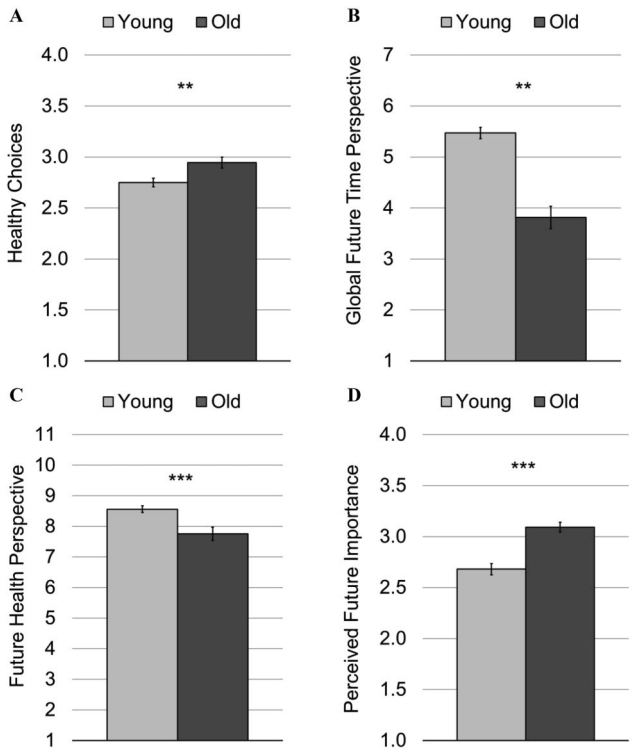

Figure 2. Bar charts depicting age-group means for healthy choices and different types of future perspective. Error bars represent standard errors of the between-groups means. * $p < .05$, ** $p < .01$, *** $p < .001$. Panel A: Age-group means for healthy choices (theoretical range: 1 = *not at all likely* to 4 = *very likely*); higher scores indicate greater tendency to make healthy choices. Panel B: Age-group means for global future time perspective (theoretical range: 1–11); higher scores indicate a more positive and more expansive sense of future time. Panel C: Age-group means for future health perspective (theoretical range: 1 = *worst possible* to 11 = *best possible*); higher scores indicate more positive future health expectations. Panel D: Age-group means for perceived importance of future health-related events (theoretical range: 1 = *not at all important* to 4 = *very important*); higher scores indicate greater perceived importance.

Aim 3: Predictions of Healthy Lifestyle Choices by Different Types of Future Perspective and Exploration of Age Moderations

Aim 3 was to determine the relations between the three types of future perspective and healthy choices and whether such relations varied across age groups. We hypothesized that healthier choices would be explained by a more open-ended global sense of the future (Hypothesis 3a) and more positive future expectations in the health domain (Hypothesis 3b). In terms of moderation effects, influences of global future time perspective and future health perspective were expected to be more pronounced in older than younger participants. Assigning greater importance to future health-related events was also expected to predict healthy choices (Hypothesis 3c), but regardless of age. We conducted a multiple linear hierarchical regression model[4] with healthy choices as the dependent variable. Age was the predictor (Step 1). Global future time perspective, future health perspective, and perceived importance of future health-related events were added in Step 2. Interaction terms for age and the three different future perspective variables, respectively, were added in Step 3. These interaction terms were orthogonal, residual centered terms and represented the unique variance associated with the interaction term, independent from the first-order effect variance (Little, Bovaird, & Widaman, 2006). Constants, unstandardized and standardized associations between healthy choices and the predictor variables, and significance levels are reported in Table 3.

Consistent with Hypothesis 1, age significantly predicted healthy choices, with older compared to younger participants reporting a greater tendency to make healthy choices. Step 1 constituted improvement over the mean-only model, $F(1, 122) = 7.18$, $p = .008$, and age alone explained 5.6% of the variance in healthy choices. The addition of the three types of future perspective as predictors of healthy choices in Step 2 further improved the model, $F(3, 119) = 14.84$, $p < .001$. Together, the three types of future thinking explained an additional 25.7% of the variance in healthy choices, above-and-beyond variance explained by age alone.

Results of the multiple linear hierarchical regression model partially supported our hypotheses for Aim 3. Contrary to Hypothesis 3a, global future time perspective was unrelated to healthy choices. However, more positive future health expectations were related to greater tendency to make healthy choices, supporting Hypothesis 3b. Further, greater perceived importance of future health-related events predicted greater tendency to make healthy choices, as expected (Hypothesis 3c). All other variables held equal, at Step 2, one standard deviation increase in future health perspective was associated with 0.35 standard deviations increase in healthy choices, and one standard deviation increase in per-

Table 3
Multiple Linear Hierarchical Regression Predicting Healthy Choices

	B	*SE B*	β
Step 1			
(Constant)	2.75	0.04	
Age	0.19	0.07	.24**
Step 2			
(Constant)	1.05	0.26	
Age	0.25	0.09	.32**
FTP	0.04	0.03	.13
FH	0.11	0.03	.35***
FIMP	0.20	0.07	.25**
Step 3			
(Constant)	1.01	0.26	
Age	0.28	0.09	.35**
FTP	0.05	0.03	.16
FH	0.12	0.03	.36***
FIMP	0.18	0.07	.23*
Age × FTP	0.03	0.06	.04
Age × FH	−0.06	0.06	−.08
Age × FIMP	−0.26	0.18	−.12

Note. $R^2 = .06$ for Step 1, $p < .01$. $R^2 = .26$ for Step 2, $p < .001$. $R^2 = .02$ for Step 3, $p = .28$. Age = Age group (0 = younger, 1 = older). FTP = Global future time perspective; FH = Future health perspective; FIMP = Perceived importance of future health-related events. Interaction terms computed using residual centering (i.e., orthogonalized) to eliminate nonessential multicollinearity and thus fully represent the unique variance associated with the interaction term, independent from the first-order effect variance (Little et al., 2006).
* $p < .05$. ** $p < .01$. *** $p < .001$.

ceived importance of future health-related events was associated with 0.25 standard deviations increase in healthy choices.[6]

Including orthogonal residual centered interaction terms as predictors of healthy choices in Step 3 did not improve the prediction of the model, $F(3, 116) = 1.31$, $p = .28$. Further, none of the age interaction terms were significantly related to healthy choices, *p*s .05, suggesting that the relations between future perspective and healthy choices were not moderated by age. This finding was contrary to our expectations of greater benefits for older individual's healthy choices from having an open-ended global future time perspective and more positive future health perspective, but was consistent with our prediction that perceived importance of future health-related events would be related to healthy choices regardless of age.

Role of physical health. Considering that current physical health is an important factor that may be related to making healthy lifestyle choices, we tested alternative multiple linear hierarchical regression models including health variables. In the first model, subjective general physical health was included in Step 1, along with age, as a predictor of healthy choices. Subjective general physical health was not related to healthy choices, and otherwise the pattern of effects was unchanged from the model summarized above and detailed in Table 3. Following this same procedure, additional models were conducted that added the following health variables, independently, to Step 1 with age: incidence of high blood pressure, incidence of high blood cholesterol, self-reported vision without glasses or contacts, and self-reported hearing without aid. None of these variables were significant predictors of healthy choices (*p*s .05 at Steps 1, 2, and 3) and, again, the pattern of results was unchanged from results reported above, in each of these models.

Post hoc analyses. The original model suggested that global future time perspective was not a direct predictor of healthy choices. However, the bivariate correlations reported in Table 2 indicated potential interrelations between the three types of future perspective. These interrelations are in line with our conceptual considerations that the three types of future perspective all occur in daily life and may contribute, independently or in tandem, to healthy lifestyle choices across adulthood. We therefore conducted a post hoc follow-up multiple mediation model to better understand these interrelationships. Specifically, we explored whether global future time perspective indirectly affected healthy choices through future health expectations and perceived importance of future health-related events. The multiple mediation analysis was conducted using SPSS PROCESS macro (Hayes, 2013) with 5,000 bootstrapped samples, and 95% level for confidence intervals was specified. Bootstrapped standard errors and confidence intervals (CI) are reported for indirect effects. The dependent variable was healthy choices, the independent variable was global future time perspective, and the two parallel mediators were future health perspective and perceived importance of future health-related events. The multiple mediation model was conducted with the entire sample (i.e., across both younger and older participants). Age was not included as a variable in the analysis.

Regression coefficients, standard errors, and summary information for the multiple mediation model are summarized in Table 4. Consistent with our original model, the total effect of global future time perspective on healthy choices was not significant, $c = 0.04$, $se = 0.02$, $p = .12$, 95% CI [−0.01, 0.09], but the direct effects of future health perspective, $b_1 = 0.10$, $se = 0.03$, $p < .001$, 95% CI [0.04, 0.16], and perceived importance of future health-related events, $b_2 = 0.31$, $se = 0.06$, $p < .001$, 95% CI [0.18, 0.43], were significant. As before, more positive expectations of future health and greater perceived importance of future health-related events were related to healthier choices.

The direct effect of global future time perspective on healthy choices was not significant, $c' = -.01$, $se = 0.03$, $p = .79$, 95% CI [−0.05, −0.04]. However, the total indirect effect of global future time perspective on healthy choices was significant, $(c - c') = 0.05$, $se = 0.02$, 95% CI [0.01, 0.09], suggesting that global future time perspective may explain variance in healthy choices through its relationships with the other two types of future perspective. Results confirmed that the indirect effect of global future time perspective on healthy choices via future health perspective was significant, $a_1 \times b_1 = 0.05$, $se = 0.02$, 95% CI: 0.01–0.09. However, the indirect effect of global future time perspective on healthy choices via perceived importance of future health-related events was not significant, $a_2 \times b_2 = -0.002$, $se = 0.01$, 95% CI [−0.02, 0.02]. Our results suggest that more positive and open global future time perspective was related to more positive future health perspective, which in turn was related to greater tendency to make healthy choices.

Discussion

The study identified differences in healthy lifestyle choices and multiple types of future perspective in younger and older adults. The effects of future perspective, and of their interactions with age, on healthy lifestyle choices were then examined. We suggested that three types of future thinking manifest simultaneously in individuals' everyday views, and affect healthy lifestyle choices. We proposed that two of these, global future time perspective and future health perspective, might have a more pronounced effect on older than younger adults' choices.

As expected, older adults made healthier choices than younger adults and held different views of the future across the three types of future perspective. Further, having a positive view of one's future health and seeing future health-related events as important were directly related to greater intention to make healthy lifestyle choices, and having a more open global future time perspective was indirectly related to making healthy choices through its effect on future health perspective. These relations were not moderated by age.

[6] Partial regression plots were examined to evaluate whether linear or quadratic relationships between the different types of future perspective variables and healthy choices were better fitting. The linear and quadratic R^2 were equivalent for future health perspective and perceived importance of future health-related events. The quadratic curve for global future time perspective ($R^2 = .04$) was slightly better-fitting than the linear curve ($R^2 = .01$), but indicated a very small effect size. To investigate this further, we ran a stepwise hierarchical regression model wherein an orthogonalized residual global future time perspective × global future time perspective interaction term was included as a predictor of healthy choices in a step following the linear global future time perspective term. The quadratic term was not a significant predictor of healthy choices.

Table 4
Regression Coefficients, Standard Errors, and Summary for the Multiple Mediation Model

		Consequent									
		M (FH)				*M* (FIMP)				*Y* (HC)	
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (FTP)	a_1	0.45	0.07	<.001	a_2	−0.005	0.03	.88	c'	−0.01	0.03	.79
M_1 (FH)		—	—	—		—	—	—	b_1	0.10	0.03	<.001
M_2 (FIMP)		—	—	—		—	—	—	b_2	0.31	0.06	<.001
Constant	i_{M1}	6.06	0.33	<.001	i_{M2}	2.86	0.16	<.001	i_Y	1.13	0.27	<.001
		$R^2 = 0.28$				$R^2 = 0.0002$				$R^2 = 0.26$		
		$F(1, 122) = 47.22$, $p < .001$				$F(1, 122) = .02$, $p = .88$				$F(3, 120) = 14.19$, $p < .001$		

Note. FTP = Global future time perspective; FH = Future health perspective; FIMP = Perceived importance of future health-related events; HC = Healthy choices.

Healthy Lifestyle Choices: A Developmental Approach

Supporting the importance of a developmental approach to the study of everyday healthy lifestyle choices, older participants reported a greater intention than younger participants to engage in healthy lifestyle behaviors in their current lives. Whereas older adults appear very willing to adopt healthy lifestyles (Renner et al., 2009), younger adults are not as careful about their health. These tendencies are in line with their life phase context. Young adulthood is a developmental period in which individuals take risks (Mata, Josef, Samanez-Larkin, & Hertwig, 2011). Younger adults may view themselves as invulnerable (Renner et al., 2009), not fully realizing that health is important and related to their own actions. As such, taking responsibility for one's health may be an additional challenge marking the transition out of emerging adulthood (Jensen, Arnett, Feldman, & Cauffman, 2004).

Previous studies on health-related choices in younger and older adults have addressed major choices (e.g., health treatment for a major illness; English & Carstensen, 2015; Löckenhoff & Carstensen, 2004; Mather, 2006). Overall, that research on major choices supports the idea that older adults make better health-related decisions than younger adults (Renner et al., 2009). We extend past findings, showing that older adults also make healthier choices in the realm of everyday lifestyle behaviors. That is, the present study presented participants with 16 lifestyle items for everyday healthy choices, representing a range of physical, social, and psychological health activities cited in the literature (Hwang, 2010). Future research may even further extend this work by taking a multidimensional approach to everyday lifestyle choices via analysis of the effect of different types of future perspective on particular health components (e.g., physical, social, psychological).

Future Perspective in Adulthood: A Multidimensional Approach

Our research contributes to a growing body of literature (Brothers, Chui, & Diehl, 2014) conceptualizing future thinking as multidimensional. This work extends beyond Socioemotional Selectivity Theory, which focuses on one type of future thinking: global future time perspective as affecting social motivation, social selectivity, and social choices (Charles & Carstensen, 2008; Löckenhoff & Carstensen, 2004). As individuals think about the future, they consider, globally, how much time they have left to live (Carstensen et al., 2000). They may also, however, reflect on how they might feel and what they value doing in the future. That is, multiple mental representations of the future may occur simultaneously (as with representations of the personal past; Neisser, 1986).

This approach allows examining future perspective in a life span context, as multidimensional and multidirectional (Baltes, Staudinger, & Lindenberger, 1999). For example, in the current work, older compared to younger participants reported a less open-ended global future time perspective and lower expectations of their future health but rated health-related future events as more important. As such, this multidimensional approach captures the nuances of how individuals view the future at different points in their life span.

Linking Future Perspective to Everyday Healthy Lifestyle Choices in Adulthood

We began with the questions, "Should I supersize the French fries?" "Should I go for a bike ride?" Our findings demonstrate the power of future perspective in making such decisions: intention to choose healthy lifestyle activities were affected by all three types of future perspective. In particular, such choices were directly related to having a positive view of one's future health and seeing future health-related events as important and indirectly related to having a more open, positive future time perspective through future health perspective. These findings dovetail with evidence that future desires positively influence present choices (Eskritt, Doucette, & Robitaille, 2014; McDade et al., 2011).

We speculate that a health-promoting cycle may be triggered through how one considers the future: believing that one will have a long healthy future may motivate current lifestyle choices that in turn contribute to actually living a longer and healthier life. This idea requires confirmation in longitudinal research. Previous studies have shown that global future time perspective (i.e., expansive vs. limited) and future health perspective (i.e., healthy vs. unhealthy) influence how individuals make choices (Löckenhoff & Carstensen, 2004; Panzer & Renner, 2009). The present study charts multiple ways that thinking about the future affect intention to engage in everyday lifestyle activities, offering multiple routes to healthy choices.

Though older adults indicated greater intention to healthier choices overall, relations between future perspective and healthy choices were not more pronounced in older than younger adults. This finding may, at first, appear contradictory. Older adults indicated intent to engage in healthier choices than the young, despite their shorter global future time perspective and their worse future health expectations (both of which were indirectly or directly related to less healthy choices). However, it is likely that older adults' healthier choices were driven by perceiving future health events as more important than younger adults. Perceiving future health activities as important may be the most proximal, and influential, way that future thinking guides healthy lifestyle choices. Our data support this interpretation in that the standardized coefficient for perceived importance was greater than that for future health perspective. It is, of course, also possible that older adults' relatively healthier choices were driven by variables not measured in the current research, and we recommend future research further examine these factors.

Given that younger and older adults differed across the three types of future perspective, and that these ways of thinking about the future may be differentially beneficial in influencing healthy choices, interventions for older and younger persons might target different aspects of future thinking as routes to healthy choices.

Implications for Interventions

Effects of future perspective on intention to make healthy choices were consistent across younger and older adults. This suggests that intervention strategies involving future perspective could be successful in individuals across adulthood. Future work will need to determine the extent to which intervening to promote positive future perspective is useful for healthy adults and the general population. Given the relatively healthy sample examined in the current study, we also recommend that future work examines whether positive future perspective is related to healthy lifestyle choices for persons who are in relatively poor health before extending an intervention to individuals in poor health or facing incurable conditions.

For individuals of all ages who are relatively healthy, however, interventions might target those who do not see the importance of following healthy habits. Some individuals may not be aware of the established links between diet, exercise, and health, and thereby may not see their individual actions as having an impact (i.e., have poor health literacy). We propose that health interventions for relatively healthy individuals could be aimed at encouraging individuals to feel that there is lots of time left in life and that they can achieve a positive future health status through their current lifestyle choices. That is, interventions could be based on the concept that positive future perspective can motivate self-regulatory processes such as goal-setting and planning behavior (Gellert et al., 2012; Ko et al., 2014). Such interventions are implicitly focused on preventative as opposed to curative medicine, emphasizing the ability to create a healthy future through lifestyle (instead of focusing on treating ill health if it arises). Community-based health education and interventions (e.g., through schools, gyms, community centers, places of worship) might use counseling, journaling, blogging, or time travel techniques to help participants' create views of their future that emphasize their future health as open, positive, and important, regardless of age.

Understanding future thinking at different points is also critical to determining effective, developmentally consonant interventions to promote healthy lifestyles. For example, based on our findings, promoting positive future health expectations may be particularly beneficial for older adults, while increasing the view of future health activities as important may be particularly fruitful for younger adults. Older adults reported a less open global future time perspective and less positive views of their future health. Thus, interventions for older adults might focus on increasing views of time left to live, thereby reducing negating norms and stereotypes that suggest that aging is inextricably linked with negative health outcomes. In contrast, interventions for younger adults may focus elsewhere: younger people already have an open-ended future time perspective and view their future health as positive. Younger adults see future health activities as less important than older adults. This may lead, over time, to the inability to form positive health habits. Thus, interventions for younger adults could target education on the importance and the "proven benefits" of engaging in healthy lifestyles for current and future health and for developing health habits in the here and now that will serve one well across the life span.

Limitations

Despite its contributions, the present study had some limitations, including its cross-sectional design. Our claims are limited to reporting age differences, not changes with age, and we cannot rule out cohort effects. Future cross-sequential designs are necessary to determine the extent of age and cohort effects (Schaie, 1994) on healthy choices and future perspective.

Next, though this work focused on healthy lifestyles, we did not measure engagement but only intention to engage in healthy behaviors. The gap between intention and actual behavior may be significant (Wieber, Thürmer, & Gollwitzer, 2015). Self-reports such as the likelihood ratings used in the present study are not unusual in the current aging and health decision-making literature (Löckenhoff & Carstensen, 2007; Mikels et al., 2010; Mikels, Reed, & Simon, 2009; Reed, Mikels, & Simon, 2008). Examination of intention constitutes a first step in understanding healthy lifestyle choices but our findings require confirmation with respect to actual health behaviors.

Participants were asked to think ahead 5–10 years into the future when generating and elaborating specific health events. In this way, future time-frame, in years, was standardized across age groups. This task feature resulted, however, in younger and older participants focusing on very different age ranges when rating the importance of personal future events: while older participants rated, on average, their 78–83 year-old selves, younger adults rated, on average, their 25–30 year-old selves. It would be interesting in future research to systematically examine the relation of future perspective to healthy choices when both younger and older adults imagined and rated themselves at same the age (i.e., when I will be 90). It is possible that, under that condition, younger adults would base their views on age stereotypes, whereas older adults would use their experience of known others, that is, peers who are a bit older than themselves, to make their judgments. As such, we would still expect younger adults to say that healthy

choices are relatively less important but to do so from the point of view that once you are that old, nothing will help you be healthy.

The current study's sample (both younger and older participants) was relatively healthy. Thus, the present study's findings may not necessarily generalize to individuals of any age who are in ill health or suffering from disease. It may be problematic to encourage positive views of future health for people, especially those whose health condition is outside their control or who are facing terminal illness. Suggesting a healthy open-ended future is likely unrealistic and may exert undue pressure on individuals with serious illness. For example, English and Carstensen (2015) showed that older adults in poor health are less likely to primarily focus on positive information but also review negative information when making health-related decisions.

Conclusion

Individuals who make healthy lifestyle choices are likely to have greater vitality when they are young (Kronish et al., 2012; Scholz, Knoll, Sniehotta, & Schwarzer, 2006) and are more likely to maintain good health from early to later adulthood (Renner, Spivak, Kwon, & Schwarzer, 2007; Schwarzer & Renner, 2000). The majority of previous research focused on how older adults use future expectations to make one-time major health decisions (English & Carstensen, 2015; Löckenhoff & Carstensen, 2004; Mather, 2006) or to guide decisions in other life domains such as financial choices (Wood, Busemeyer, Koling, Cox, & Davis, 2005). The current research extends this literature by showing how future perspective is related to making everyday health-related lifestyle choices in adulthood. None of us can predict the future but all of us have beliefs and expectations about what it holds for us and what we value. Our findings show that, whatever the future holds, regardless of our age, our perspective on the future can motivate us to live well in the present.

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Appendix

Selection of Items for the Healthy Lifestyle Choices Task

The original pool of items reflected several areas in which individuals make health choices (e.g., exercise, diet, social and leisure activities). Wording of selected items was modified so that approximately one third of the items were negatively worded and two thirds of the items were positively worded. An independent sample of younger ($n = 7$) and older ($n = 7$) raters, half male and half female, evaluated the larger pool of items. Items were presented in a randomized order, and each item was rated for (a) healthiness, (b) typicality for people "your" age, and (c) ease of visualization, using a Likert scale from 0 = *not at all* to 7 = *very* (*healthy/typical for people of my age/easy to visualize*).

A smaller set of items was selected based on these independent ratings. In particular, selection criteria for items were unanimous ratings as either healthy or unhealthy, own-age-typical, and easy to visualize. That is, items were excluded if rated as healthy (i.e., above 4) by one participant and unhealthy (i.e., below 4) by another participant. All items were rated overall as typical and easy to visualize by both age groups. Additionally, any item that was rated as more typical or easier to visualize by younger than older raters, or vice versa ($p < .001$), was excluded. Also, items for which one or more participants answered "do not know" were removed. The final set of items was selected to represent each of five life domains: exercise (e.g., play a sport), social (e.g., visit with family), nutrition (e.g., drink lots of water), hobbies and leisure (e.g., read a book), and health and hygiene (e.g., attend health seminar).

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