



Life-Span Development, 17th ed.
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Content Revisions:

A significant reason why Life-Span Development has been successfully used by instructors for the previous fifteen editions is the painstaking effort and review that goes into making sure the text provides the latest research on all topic areas discussed in the classroom. This new edition is no exception, with more than 1,500 citations from 2017, 2018, and 2019. Also, a number of content revisions were based on feedback obtained by McGraw-Hill using a Heat Map system that highlights aspects of the content on which students are performing well and not well on tests. In this new edition, I especially focused on clarifying content in “Physical and Cognitive Development in Infancy,” “Physical and Cognitive Development in Early Childhood,” and “Physical and Cognitive Development in Middle and Late Childhood.” New research and content that has especially been updated and expanded include: diversity and culture; genetics and epigenetics; neuroscience and the brain; identity issues, especially gender and transgender; health; technology; and successful aging.

Chapter by Chapter Changes

Chapter 1: Introduction

- Update on life expectancy in the United States (U.S. Census Bureau, 2017)
- New projections on the significant increase in older adults in the world, with estimates of a doubling of the population of individuals 60 and over and a tripling or quadrupling of those 80 and over by 2050 (United Nations, 2015)
- New Connecting with Careers profile on Gustavo Medrano, a clinical psychologist who provides therapy especially for Latino children
- Updated data on the percentage of U.S. children and adolescents under 18 years of age living in poverty, including data reported separately for African American and Latino families (Jiang, Granja, & Koball, 2017)

- In the discussion of gender, new content on transgender (Budge & Orovecz, 2018; Savin-Williams, 2017)
- In the section on contemporary topics, a new discussion of technology has been added, including an emphasis on how pervasive technology has become in people's lives and how it might influence their development
- New coverage of a recent study of 26 countries indicating that individuals in Chile had the highest life satisfaction; those in Bulgaria and Spain the lowest (Jang & others, 2017)
- New description of the positive outcomes when individuals have pride in their ethnic group, including recent research (Umana-Taylor & others, 2018)
- In the section on biological processes, new emphasis on the significant increase in studies of actual genes on development and epigenetic studies (Clukay & others, 2018; Manzi & others, 2018) as well as the brain's role in development (Park & Festini, 2018; Sullivan & Wilson, 2018) because of technological advances
- New description of emerging adulthood and the dramatic increase in studies on this transitional period between adolescence and adulthood (Arnett, 2016a, b; Jensen, 2018)
- Inclusion of a study involving 17-year survival rates of 20- to 93-year-old Korean adults indicating that when biological age became greater than chronological age, individuals were less likely to have died (Yoo & others, 2017)
- New content involving how the information processing approach often uses a computer analogy to help explain the connection between cognition and the brain, and how humans process information
- New discussion of artificial intelligence and the new emerging field of developmental robotics that examines various developmental topics and issues using robots, including a new photograph of a "human-like" baby robot (Cangelosi & Schlesinger, 2015; Morse & Cangelosi, 2017)
- Updated and expanded coverage of research methods, including the increased use of eye-tracking devices to assess infants' perception (Boardman & Fletcher-Watson, 2017); attention (Meng, Uto, & Hashiva, 2017); autism (Finke, Wilkinson, & Hickerson, 2017); and preterm birth effects on language development (Loi & others, 2017)
- In the section on physiological methods, expanded discussion of recent advances in assessing genes to include specific genes linked to childhood obesity (Xing & others, 2018)

Chapter 2: Biological Beginnings

- Updating of chapter based on comments by leading expert Kirby Deater-Deckard
- Deletion of section on shared and non-shared environmental experiences as it is now being given less attention as a result of the increased emphasis on gene x environment interaction
- Updated and expanded research on how exercise, nutrition, and respiration can modify the expression of genes (Kader & others, 2018; Poulsen & others, 2018)
- Updated and expanded coverage of the process of methylation, in which tiny atoms attach themselves to the outside of a gene. Researchers have found that exercise, diet, and tobacco use can change whether a gene is expressed or not through the methylation process (Castellano-Castillo & others, 2018; Martin & Fry, 2018).
- Updated and expanded discussion of genome-wide association studies, including research on suicide (Sokolowski, Wasserman, & Wasserman, 2016), autism (Ramawami & Geschwind, 2018), and glaucoma (Springelkamp & others, 2017)
- Updated and expanded research on gene-gene interaction, including studies of obesity (Bordoni & others, 2017), type 2 diabetes (Saxena, Srivastaya, & Banerjee, 2017), cancer (Sucheston-Campbell & others, 2018), and cardiovascular disease (Olsen & others, 2018)
- Inclusion of recent research in which a higher-level maternal responsivity to children with fragile X syndrome's adaptive behavior improved the children's communication skills (Warren & others, 2017)
- New content on the number of children born worldwide with sickle-cell anemia and how stem cell transplantation is being explored in the treatment of infants with sickle-cell anemia (Azar & Wong, 2017)
- Updated description of how research now supports the use of hydroxyurea therapy for infants with sickle-cell anemia beginning at 9 months of age (Nevitt, Jones, & Howard, 2017)
- New Connecting with Careers profile on genetic counselor Jennifer Leonhard
- Inclusion of information from a recent research review that concluded fetal MRI does not provide good results in the first trimester of pregnancy because of small fetal structures and movement artifacts (Wataganara & others, 2016). In this review, it also was argued that fetal MRI can especially be beneficial in assessing central nervous system abnormalities in the third trimester of pregnancy.
- New commentary that maternal blood screening can be used to detect congenital heart disease risk in the fetus (Sun & others, 2016)
- New content on fertility drugs being more likely to produce multiple births than in vitro fertilization (March of Dimes, 2018)
- New coverage of a recent national study in which low birth weight and preterm birth were significantly higher in infants conceived through assisted reproduction technology (Sunderam & others, 2017)
- Discussion of a recent study of 3- to 5-year-old children in which parents' secure attachment increased their adopted children's secure attachment, with mothers' secure attachment making a stronger contribution to their children's secure attachment than fathers' secure attachment (Barone, Lionetti, & Green, 2017)
- Coverage of a recent research review of internationally adopted adolescents in which although a majority were well adjusted, adoptees had a higher level of mental health problems than their non-adopted counterparts (Askeland & others, 2017)
- Inclusion of recent research that revealed no differences in the adjustment of school-aged children adopted in infancy by gay, lesbian, and heterosexual parents (Farr, 2017)
- Description of a recent study of lesbian and gay adoptive families which indicated that 98 percent of the parents reported their children had adjusted well to school (Farr, Oakley, & Ollen, 2016)

Chapter 3: Prenatal Development and Birth

- Revisions based on feedback from leading expert consultant Janet DiPietro
- Added commentary about the special concern that drugs can be transferred from the mother to the fetus through the placenta (Koren & Ornoy, 2018)
- Updated data on the average length and weight of the fetus at different points in prenatal development, including revisions involving these data in Figure 3 in “Biological Beginnings”
- New commentary about neurogenesis being largely complete by about the end of the fifth month of prenatal development (Keunen, Counsell, & Benders, 2017)
- Discussion of recent research indicating that isotretinoin (used to treat acne) is commonly prescribed for adolescent girls seeking contraceptive advice but often is not accompanied by adequate information about its harmful effects on offspring if the girls become pregnant (Eltonsy & others, 2016; Stancil & others, 2017)
- Coverage of recent research on negative outcomes for fetal alcohol spectrum disorders (FASD) that include lower executive function (Kingdon, Cardoso, & McGrath, 2016), as well as externalized and internalized behavior problems (Tsang & others, 2016), and a significantly lower life expectancy (Thanh & Jonsson, 2016)
- New content about a recent large-scale U.S. study in which 11.5 percent of adolescent and 8.7 percent of adult pregnant women reported using alcohol in the previous month (Oh & others, 2017)
- New description of the French Alcohol Society’s (2016) recommendation that women should not consume any alcohol during pregnancy
- Discussion of a recent meta-analysis of 15 studies that concluded smoking during pregnancy increases the risk of children having ADHD and that the risk is greater if their mother is a heavy smoker (Huang & others, 2018)
- Inclusion of recent research indicating that maternal cigarette smoking during pregnancy was linked to increased risk of cigarette smoking in offspring at 16 years of age (De Genna & others, 2016)
- Description of recent research in which daughters whose mothers smoked during their pregnancy were more likely to subsequently smoke during their own pregnancy (Ncube & Mueller, 2017)
- Coverage of a recent study that found despite the plethora of negative outcomes for maternal smoking during pregnancy, 23 percent of pregnant adolescent and 15 percent of adult pregnant women reported using tobacco in the previous month (Oh & others, 2017)
- Inclusion of recent research in which cocaine use during pregnancy was associated with impaired connectivity of the thalamus and prefrontal cortex in newborns (Salzwedel & others, 2017)
- Discussion of recent research indicating that cocaine use by pregnant women is linked to attention deficit hyperactivity disorder, oppositional defiant disorder, and posttraumatic stress disorder (PTSD) in offspring (Richardson & others, 2016), as well as self-regulation problems at age 12 (Minnes & others, 2016)
- Coverage of a recent meta-analysis that found marijuana use during pregnancy was associated with the following outcomes in offspring: low birth weight and an increased likelihood of being placed in a neonatal intensive care unit (Gunn & others, 2016)
- New research indicating that pregnant women have increased their use of marijuana in recent years (Brown & others, 2016)
- Description of recent research that found cardiac defects, pulmonary problems, and microcephaly were among the most common fetal and neonatal outcomes when pregnant women have rubella (Yazigi & others, 2017)
- Inclusion of a recent study that concluded maternal obesity during pregnancy is associated with an increased likelihood of offspring becoming obese in childhood and adulthood (Pinto Pereira & others, 2016)
- Revised content on fish consumption by pregnant women, who are now being advised to increase their fish consumption, especially eating more low-mercury-content fish such as salmon, shrimp, tilapia, and cod (American Pregnancy Association, 2018)
- Inclusion of recent research that revealed maternal prenatal stress and anxiety were linked to lower levels of infants’ self-regulation (Korja & others, 2017)
- Description of a recent study in which taking antidepressants early in pregnancy was linked to increased risk of miscarriage (Almeida & others, 2016)
- Discussion of a recent study that found when fetuses were exposed to serotonin-based antidepressants, they were more likely to be born preterm (Podrebarac & others, 2017)
- Coverage of a recent study that revealed taking antidepressants in the second or third trimester was associated with increased risk of autism in children (Boukhris & others 2016)
- Description of a recent research review that concluded tobacco smoking is linked to impaired male fertility and increases in DNA damage, aneuploidy (abnormal number of chromosomes in a cell), and mutations in sperm (Beal, Yauk, & Marchetti, 2017)
- Discussion of a recent study that revealed regular exercise by pregnant women was linked to more advanced development in the neonatal brain (Laborte-Lemoyne, Currier, & Ellenberg, 2017)
- Inclusion of recent research in which two weekly 70-minute yoga sessions reduced pregnant women’s stress and enhanced their immune system functioning (Chen & others, 2017)
- Discussion of a recent research review in which participation in CenteringPregnancy increased initiation of breast feeding by 53 percent overall and by 71 percent in African American women (Robinson, Garnier-Villarreal, & Hanson, 2018)
- Coverage of a recent Swedish study that found women who gave birth in water had fewer vaginal tears, shorter labor, needed fewer drugs for pain relief and interventions by medical personnel, and rated their birth experience more positively than women who had conventional spontaneous vaginal births (Ulfsdottir, Saltvedt, & Georgsson, 2018)

- Inclusion of recent studies in which massage reduced women's pain during labor (Gallo & others, 2018; Shahoei & others, 2018; Unalmis Erdogan, Yanikkerem, & Goker, 2017)
- Update on the percentage of U.S. births that take place in hospitals, at home, and in birthing centers and the percentage of babies born through cesarean delivery (Martin & others, 2017)
- New description of global cesarean delivery rates, with the Dominican Republic and Brazil having the highest rates (56 percent) and New Zealand and the Czech Republic the lowest (26 percent) (McCullough, 2016). The World Health Organization recommends a cesarean rate of 10 percent or less
- Revised and updated content on cesarean delivery to include two specific reasons it is carried out: failure to progress through labor and fetal distress
- Coverage of recent studies that have found low Apgar scores are linked to long-term needs for additional educational support and reduced educational attainment (Tweed & others, 2016), risk of developmental vulnerability at 5 years of age (Razaz & others, 2016), and risk for developing ADHD (Hanc & others, 2016)
- Updated data on the percentage of births in the United States that are preterm, low birth weight, and cesarean section (Martin & others, 2017)
- Description of recent research indicating that extremely preterm and low birth weight infants have lower executive function, especially in working memory and planning (Burnett & others, 2018)
- Inclusion of recent research that revealed kangaroo care was effective in reducing neonatal pain (Johnston & others, 2017; Mooney-Leber & Brummelte, 2017)
- Discussion of a longitudinal study in which the nurturing positive effects of kangaroo care with preterm and low birth weight infants at one year of age were still present 20 years later in a number of positive developmental outcomes (Charpak & others, 2017)
- Coverage of a recent study that revealed worsening or minimal improvement in sleep problems from 6 weeks to 7 months postpartum was associated with increased depressive symptoms (Lewis & others, 2018)
- Description of recent research that found women who had a history of depression were 20 times more likely to develop postpartum depression than women who had no history of depression (Silverman & others, 2017)
- Inclusion of recent research in which mothers' postpartum depression, but not generalized anxiety, was linked to their children's emotional negativity and behavior problems at 2 years of age (Prenoveau & others, 2017)
- Coverage of a recent meta-analysis that concluded that physical exercise during the postpartum period is a safe strategy for reducing postpartum depressive symptoms (Poyatos-Leon & others, 2017)
- Discussion of a recent study that found depressive symptoms in mothers and fathers were linked to impaired bonding with their infant in the postpartum period (Kerstis & others, 2016)

Chapter 4: Physical Development in Infancy

- Changes based on feedback from leading children's nutrition expert, Maureen Black, and leading children's motor development expert, Karen Adolph
- New discussion of how infant growth is often not smooth and continuous but rather is episodic, occurring in spurts (Adolph & Berger, 2015; Lampl & Schoen, 2017)
- Coverage of a recent study that found higher-quality mother-infant interaction predicted a higher level of frontal lobe functioning when assessed by EEG later in infancy (Bernier, Calkins, & Bell, 2016)
- Description of a recent study in which sleep sessions lasted approximately 3.5 hours during the first few months and increased to about 10.5 hours from 3 to 7 months (Mindell & others, 2016)
- Discussion of recent research indicating that later bedtime sleep and less sleep across a 24-hour period were linked to infants having more separation distress, greater inhibition, and higher anxiety and depression levels (Mindell & others, 2017)
- Other recent research indicating that a higher level of maternal emotional availability at bedtime was associated with a lower level of infant distress at bedtime and longer infant sleep duration (Philbrook & Teti, 2016)
- New indication that approximately 15 to 25 percent of infants have sleep problems
- New commentary about how many mothers today are providing their babies with "tummy time" to prevent a decline in prone skills that can occur because of the "back to sleep movement" to prevent SIDS
- Discussion of a recent research review that revealed a positive link between infant sleeping and cognitive functioning, including memory, language, and executive function (Tham, Schneider, & Broekman, 2017)
- Coverage of a recent study that found sleep difficulties in infancy were linked to developmental problems in attention (Geva, Yaron, & Kuint, 2016)
- Description of recent research in which introduction of vegetables at 4 to 5 months of age was linked with a lower level of infant fussy eating at 4 years of age than when vegetables were introduced after 6 months (de Barse & others, 2017)
- Updated data on the continuing increase in breast feeding by U.S. mothers (Centers for Disease Control and Prevention, 2016)
- Updated support for the role of breast feeding in reducing a number of disease risks for children and their mothers (Bartick & others, 2018)
- Inclusion of a recent research review indicating that breast feeding is not associated with a reduced risk of allergies in young children (Heinrich, 2017)
- Description of recent research indicating a reduction in hospitalization for breast-fed infants and breast feeding mothers for a number of conditions (Bartick & others, 2018)
- Discussion of a recent study that found a small increase in intelligence for children who had been breast-fed (Bernard & others, 2017)

- New Connecting with Careers profile on Dr. Faize Mustafa-Infante, pediatrician
- New coverage of a recent study of infants' organization of exploratory behaviors in planning locomotion in challenging contexts (Kretch & Adolph, 2018)
- Discussion of a recent study that examined a number of predictors of motor milestones in the first year (Flensburg-Madsen & Mortensen, 2017)
- Inclusion of recent research in which 3-month-old infants were provided with reaching experiences and subsequently engaged in increased object exploration and attention focusing at 5.5 months of age compared with infants of the same age who had not received this intervention (Libertus, Joh, & Needham, 2016)
- New coverage of a recent study that revealed 3-month-old infants who participated in active motor training using sticky mittens that allowed them to pick up toys engaged in more sophisticated object exploration at 15 months (Wiesen, Watkins, & Needham, 2016)
- Inclusion of recent research in which kangaroo care was effective in reducing neonatal pain (Seo, Lee, & Ahn, 2016)
- Revision of the nature/nurture section in the content on perceptual development to better reflect the Gibsons' view

Chapter 5: Cognitive Development in Infancy

- Changes based on feedback from leading experts Patricia Miller and John Richards
- New coverage of a recent study of 5-month-olds that found their better performance on an A-not-B task was linked to how well they focused their attention on a different task, indicating that infants' attention may be involved in performance variations on the A-not-B task (Marcovitch & others, 2016)
- Expanded and updated criticism of the innate view of the emergence of infant morality with an emphasis on the importance of infants' early interaction with others and later transformation through language and reflective thought (Carpendale & Hammond, 2016)
- Revised writing for improved clarity of the section "Evaluation of the Sensorimotor Stage"
- Inclusion of a recent study that found sustained attention at 10 months of age was linked to better self-regulation at 18 months of age, even when infants had insensitive mothers (Frick & others, 2018)
- Revised discussion of habituation for improved student understanding
- Coverage of a recent study in which hand-eye coordination involving connection of gaze with manual action on objects rather than gaze following alone predicted joint attention (Yu & Smith, 2017)
- New description of Andrew Meltzoff's (2017) view that infants' imitation informs us about their processing of social events and contributes to rapid social learning
- Revisions and updates based on feedback from leading experts Roberta Golinkoff and Virginia Marchman
- Deletion of section on infant intelligence tests as there is less interest in these tests than in the past
- New opening commentary about the nature of language learning and how it involves comprehending a sound system (or sign system for individuals who are deaf), the world of objects, actions, and events, and how units such as words and grammar connect sound and world (Hoffman, 2018; Nathan, 2018)
- Revised definition of infinite generativity to include comprehension as well as production
- Expanded description of how statistical regularity of information is involved in infant word learning (Pace & others, 2016)
- New commentary on how infants' babbling influences the behavior of their caregivers, creating social interaction that facilitates their own communicative development (Albert, Schwade, & Goldstein, 2018)
- New research that indicates age at babbling onset predicts when infants will say their first words (McGillion & others, 2017a) New commentary describing why gestures such as pointing promote further advances in language development
- New commentary about the vocabulary spurt and how it involves an increase in the pace at which words are learned
- Expanded discussion of statistical learning, including how infants soak up statistical regularities around them merely through exposure to them (Aslin, 2017)
- Expanded descriptions of the functions that child-directed speech serves, including providing infants with information about their native language and heightening differences with speech directed to adults (Golinkoff & others, 2015)
- Coverage of recent research in which child-directed speech in a one-to-one social context for 11- to 14-month-olds was related to productive vocabulary at 2 years of age for Spanish-English bilingual infants for both languages and each language independently (Ramirez-Esparza, Garcia-Sierra, & Kuhl, 2017)
- New discussion of recent research in several North American urban areas and the small island of Tanna in the South Pacific Ocean that found fathers in both contexts engaged in child-directed speech with their infants (Broesch & Bryant, 2018)
- New emphasis on the importance of social cues in infant language learning (Akun & others, 2018; McGillion & others, 2017b)
- Coverage of a recent study in which both full-term and preterm infants who heard more caregiver talk (based on all-day recordings) at 16 months of age had better language skills at 18 months of age (Adams & others, 2018)
- Revised definitions of recasting, expanding, and labeling
- New content on the recent position statement issued by the American Association of Pediatrics (2016) on co-viewing of videos indicating that infants can benefit when parents watch videos with them and communicate with them about the videos
- Expanded coverage of how parents can facilitate infants' and toddlers' language development

Chapter 6: Socioemotional Development in Infancy

- Revisions based on feedback from leading expert Joan Grusec

- New introductory comments about the important role that cognitive processes, in addition to biological and experiential influences, play in children's emotional development, both in the moment and across childhood Bell, Diaz, & Liu, 2018; Jiang & others, 2017)
- Discussion of a recent study in which maternal sensitivity was linked to lower levels of infant fear (Gartstein, Hancock, & Iverson, 2018)
- Description of a recent study that revealed excessive crying in 3-month-olds doubled the risk of behavioral, hyperactive, and mood problems at 5 to 6 years of age (Smarius & others, 2017)
- Coverage of a recent study that found depressed mothers rocked and touched their crying infants less than non-depressed mothers did (Esposito & others, 2017a)
- New description of a study in which young infants with a negative temperament used fewer attention regulation strategies, and maternal sensitivity was linked to more adaptive emotion regulation in infants (Thomas & others, 2017)
- New research that found positive affectivity, surgency, and self-regulation capacity assessed at 4 months of age was linked to school readiness at 4 years of age (Gartstein, Putnam, & Kliever, 2016)
- Two new research studies in which a lower level of effortful control at 3 years of age was linked with ADHD symptoms in the first grade (Willoughby, Gottfredson, & Stifter, 2017) and at 13 years of age (Einziger & others, 2018)
- Description of a recent study that revealed if parents had a childhood history of behavioral inhibition, their children who also had a high level of behavioral inhibition were at risk for developing anxiety disorders (Stumper & others, 2017)
- New coverage of recent research in which children who had a difficult temperament at 5 and 14 years were more likely to have mental health problems at 21 years of age (Kingsbury & others, 2017)
- Expanded and updated content on the increasing belief that babies are socially smarter than used to be thought, including information about research by Amanda Woodward and her colleagues (Krough-Jespersen & Woodward, 2016; Liberman, Woodward, & Kinzler, 2018; Shneidman & Woodward, 2016; Sodian & others, 2016) indicating how quickly infants understand and respond to others' meaningful intentions
- Discussion of a recent study in which maternal sensitivity and a better home environment in infancy predicted higher self-regulation at 4 years of age (Birmingham, Bub, & Vaughn, 2017)
- Description of recent research that revealed providing parents who engage in inadequate or problematic caregiving with practice and feedback focused on interacting sensitively with their infants enhances parent-infant attachment security (Dozier & Bernard, 2017; Dozier, Bernard, & Roben, 2017; Woodhouse & others, 2017)
- Inclusion of recent research in Zambia, where siblings were substantially involved in caregiving activities, that revealed infants showed strong attachments to both their mothers and their sibling caregivers, with secure attachment being the most frequent attachment classification for both mother-infant and sibling-infant relationships (Mooya, Sichimba, & Bakermans-Kranenburg, 2016)
- Description of a recent study that did not find support for the view that genes influence mother-infant attachment (Leerkes & others, 2017b)
- Updated and expanded coverage of the neuroscience of attachment to include the role of the brain's neurotransmitter dopamine circuits that provide pleasure and reward when mothers care for their infant and are exposed to their infants' cues. These experiences and brain changes likely promote mother-infant attachment and sensitive parenting (Feldman, 2017; Kim, Strathearn, & Swain, 2016; Sullivan & Wilson, 2018).
- Discussion of a recent study that found when adults used scaffolding, infants were twice as likely to engage in helping behavior (Dahl & others, 2017)
- Coverage of a recent study of disadvantaged families in which an intervention that involved improving early maternal scaffolding was linked to improved cognitive skills when the children were 4 years old (Obradovic & others, 2016)
- Coverage of a recent study in which both paternal and maternal sensitivity assessed when the infant was 10 to 12 months old were linked to the child's cognitive development at 18 months of age and the child's language development at 36 months (Malmberg & others, 2016)
- New content about mothers playing 3 times more often with children than fathers do (Cabrera & Roggman, 2017)
- Inclusion of recent research with low-income families indicating that fathers' playfulness when children were 2 years of age was associated with more advanced vocabulary skills at 4 years of age, while mothers' playfulness when children were 2 years of age was linked to a higher level of emotion regulation at 4 years of age (Cabrera & others, 2017)
- Discussion of a recent study that found negative outcomes on cognitive development in infancy when fathers were more withdrawn and depressed and positive outcomes on cognitive development when fathers were more engaged and sensitive, as well as less controlling with their infants (Sethna & others, 2017)

Chapter 7: Physical and Cognitive Development in Early Childhood

- Inclusion of recent research on how poverty is linked to maturational lags in children's frontal and temporal lobes, and these lags are associated with low school readiness skills (Hair & others, 2015)
- Coverage of a recent study in which young children's higher cognitive ability was linked to increased myelination by 3 years of age (Deoni & others, 2016)
- Discussion of a recent study of 4-year-old girls that found a nine-week motor skill intervention improved the girls' ball skills (Veldman & others, 2017)
- Description of recent research indicating that higher motor skill proficiency in preschool was linked to engaging in a higher level of physical activity in adolescence (Venetsanou & Kambas, 2017)
- Inclusion of recent research that found children with a low level of motor competence had a lower motivation for sports participation and lower global self-worth than their counterparts who had a high level of motor competence (Bardid & others, 2018)

- Discussion of a recent study that revealed 2½-year-old children's liking for fruits and vegetables was related to their eating more fruits and vegetables at 7 years of age (Fletcher & others, 2018)
- Updated data on the percentage of U.S. 2- to 5-year-old children who are obese (Ogden & others, 2016)
- Update on the leading causes of death in young children in the United States (Centers for Disease Control and Prevention, 2017)
- New description of the recently devised 5-2-1-0 obesity prevention guidelines for young children: 5 or more servings of fruits and vegetables, no more than 2 hours of screen time, minimum of 1 hour of physical activity, and 0 sugar-sweetened beverages daily (Khalsa & others, 2017)
- New discussion of a longitudinal study that revealed when young children were exposed to environmental tobacco smoke they were more likely to engage in antisocial behavior at 12 years of age (Pagani & others, 2017)
- Revisions based on feedback from leading expert Megan McClelland
- Inclusion of recent research showing the effectiveness of the Tools of the Mind approach in improving a number of cognitive processes and academic skills in young children (Blair & Raver, 2014)
- New research indicating that parental engagement in mind-mindedness advanced preschool children's theory of mind (Hughes, Devine, & Wang, 2017)
- Inclusion of a recent study of 3- to 5-year-old children that revealed earlier development of executive function predicted theory of mind performance, especially for false-belief tasks (Doenyas, Yavuz, & Selcuk, 2017)
- Updated and expanded theory of mind content involving various aspects of social interaction, including the influence of secure attachment and mental state talk, parental engagement, and living in a higher-socioeconomic-status family (Devine & Hughes, 2018a, b)
- Coverage of a recent study in which theory of mind predicted the severity of autism in children (Hoogenhout & Malcolm-Smith, 2017)
- Revisions in the discussion of young children's language development based on feedback from leading experts Roberta Golinkoff and Virginia Marchman
- Expanded discussion of young children's literacy and the key aspects involved
- Coverage of a recent multigenerational study that found when both children and their mothers participated in Head Start, positive cognitive and socioemotional outcomes occurred for the children (Chor, 2018)
- Update on the increase in publicly funded preschool programs that now exist in 42 states plus the District of Columbia (National Institute for Early Education Research, 2016)
- Description of two recent studies that confirmed the importance of improved parenting engagement and skills in the success of Head Start programs (Ansari & Gershoff, 2016; Roggman & others, 2016)

Chapter 8: Socioemotional Development in Early Childhood

- New emphasis on the degree to which young children learn by observing the behavior of others, including a recent study in which young children who observed a peer being rewarded for confessing to cheating were more likely to be honest in the future (Ma & others, 2018)
- Inclusion of recent research indicating that a broad capacity for self-evaluative emotion was present in the preschool years and was linked to young children's empathetic concern (Ross, 2017)
- Description of a recent study in which young children with higher emotion regulation were more popular with their peers (Nakamichi, 2018)
- New commentary about connections between different emotions and how they may influence development, including a recent study in which participants' guilt proneness combined with their empathy to predict an increase in prosocial behavior (Torstevelt, Sutterlin, & Lugo, 2016)
- New discussion of how recent research has documented the role of guilt in young children's cooperation (Vaish, 2018; Vaish, Carpenter, & Tomasello, 2016)
- Coverage of a recent study in Great Britain in which gender non-conforming boys were most at risk for peer rejection (Braun & Davidson, 2017)
- Inclusion of a recent research review of a large number of studies that found authoritarian parenting was associated with a higher level of externalizing problems (Pinquart, 2017)
- Coverage of a recent study in which an authoritarian style, as well as pressure to eat, were associated with a higher risk for being overweight or obese in young children (Melis Yavuz & Selcuk, 2018)
- Discussion of a recent study that revealed children of authoritative parents engaged in more prosocial behavior than their counterparts whose parents used the other parenting styles discussed in the section (Carlo & others, 2018)
- Description of a recent research review in which authoritative parenting was the most effective parenting style in predicting which children and adolescents would be less likely to be overweight or obese later in their development (Sokol, Qin, & Puti, 2017)
- Inclusion of a recent research review of risk factors for engaging in child neglect which concluded that most risks involved parental factors, including a history of antisocial behavior/criminal offending, having mental/physical problems, and experiencing abuse in their own childhood (Mulder & others, 2018)
- New commentary about how in many traditional cultures, fathers use an authoritarian style; in such cultures, children benefit more when mothers use an authoritative parenting style
- Coverage of a recent research review that concluded there is widespread approval of corporal punishment by U.S. parents (Chiocca, 2017)
- Discussion of a longitudinal study that found harsh physical punishment in childhood was linked to a higher incidence of intimate partner violence in adulthood (Affi & others, 2017b)

- Description of a recent Japanese study in which occasional spanking at 3 years of age was associated with a higher level of behavioral problems at 5 years of age (Okunzo & others, 2017)
- Discussion of a recent meta-analysis that found when physical punishment was not abusive, physical punishment still was linked to detrimental child outcomes (Gershoff & Grogan-Kaylor, 2016)
- Coverage of a recent study that found physical abuse was linked to lower levels of cognitive performance and school engagement in children (Font & Cage, 2018)
- Inclusion of a recent study that revealed exposure to either physical or sexual abuse in childhood and adolescence was linked to an increase in 13- to 18-year-olds' suicidal ideation, plans, and attempts (Gomez & others, 2017)
- Description of a longitudinal study in which experiencing abuse and neglect in the first five years of life was linked to having more interpersonal problems and lower academic achievement from childhood through the thirties (Raby & others, 2018)
- Coverage of a recent study that indicated a bidirectional association between a child's behavior (conduct problems, for example) and quality of sibling relationships (Pike & Oliver, 2017)
- Discussion of a recent study in which experiencing maltreatment and parental divorce during childhood was linked to midlife suicidal ideation (Stansfield & others, 2017)
- Coverage of a recent study that found interparental hostility was a stronger predictor of children's insecurity and externalizing problems than interparental disagreement and low levels of interparental cooperation (Davies & others, 2016)
- Description of recent research on non-residential fathers in divorced families that linked high father-child involvement and low interparental conflict to positive child outcomes (Flam & others, 2016)
- Discussion of a recent study that found co-parenting following divorce was positively associated with better mental health and higher self-esteem and academic achievement (Lamela & Figueiredo, 2016)
- Updated data on the percentage of gay and lesbian parents who are raising children
- Inclusion of recent research that revealed no differences in the adjustment of school-aged children adopted in infancy by gay, lesbian, and heterosexual parents (Farr, 2017)
- Description of a recent study of lesbian and gay adoptive families in which 98 percent of the parents reported their children had adjusted well to school (Farr, Oakley, & Ollen, 2017)
- Coverage of a longitudinal study that found a multi-component (school-based educational enrichment and comprehensive family services) preschool-to-third-grade intervention with low-income minority children in Chicago was effective in increasing their likelihood of graduating from high school and succeeding in college (Reynolds, Qu, & Temple, 2018)
- Update on the most recent national survey of screen time indicating a dramatic shift to greater use of mobile devices in young children (Common Sense Media, 2013)
- Inclusion of recent research with 2- to 6-year-olds that indicated increased TV viewing on weekends was associated with a higher risk of being overweight or obese (Kondolot & others, 2017)
- Description of a recent meta-analysis that found children's exposure to prosocial media is linked to higher levels of prosocial behavior and empathetic concern (Coyne & others, 2018)

Chapter 9: Physical and Cognitive Development in Middle and Late Childhood

- New coverage of the increase in brain connectivity as children develop (Faghiri & others, 2018), including a longitudinal study that found greater connectivity between the prefrontal and parietal regions in childhood was linked to better reasoning ability later in development (Wendelken & others, 2017)
- Discussion of a recent study of elementary school children that revealed 55 minutes or more of daily moderate-to-vigorous physical activity was associated with a lower incidence of obesity (Nemet, 2016)
- New inclusion of processing speed as one of the cognitive processes positively influenced by children's exercise (Chu & others, 2017)
- Description of a recent meta-analysis that found participation in a sustained program of physical activity improved children's attention, executive function, and academic achievement (de Greeff & others, 2018)
- Coverage of a recent study with 7- to 13-year-olds in which a 6-week high-intensity exercise program resulted in improved cognitive control and working memory (Moreau, Kirk, & Waldie, 2018)
- Inclusion of recent research with 8- to 12-year-olds indicating that screen time was associated with lower connectivity between brain regions, as well as lower language skills and cognitive control, while time spent reading was linked to higher levels in these areas (Horowitz-Kraus & Hutton, 2018)
- Updated data on the percentage of 6- to 11-year-old U.S. children who are obese (Ogden & others, 2016)
- Inclusion of a recent Japanese study that revealed the family pattern that was linked to the highest rates of overweight/obesity in children was a combination of irregular mealtimes and the most screen time for both parents (Watanabe & others, 2016)
- Discussion of a recent study in which children were less likely to be obese or overweight when they attended schools in states that had a strong policy emphasis on serving healthy foods and beverages (Datar & Nicosia, 2017)
- Coverage of a longitudinal study in which elevated levels of body fat and blood pressure beginning in childhood were linked to premature death from coronary heart disease in adulthood (Berenson & others, 2016)
- Inclusion of research indicating that children with high blood pressure are likely to continue having it, as well as other heart abnormalities, as adults (Fan & others, 2018)
- Updated statistics on the percentage of U.S. children who have different types of disabilities and an updated version of Figure 4 (National Center for Education Statistics, 2016)
- Updated statistics on the percentage of U.S. children who have ever been diagnosed with ADHD (Centers for Disease Control and Prevention, 2016)

- Description of a recent research review that found girls with ADHD had more problematic peer relations than typically developing girls in a number of areas (Kok & others, 2016)
- Coverage of a recent research review that concluded ADHD in childhood is linked to a number of long-term outcomes (Erksine & others, 2016)
- Discussion of a recent study that found childhood ADHD was associated with long-term underachievement in math and reading (Voigt & others, 2017)
- Description of a recent study in which individuals with ADHD were more likely to become parents at 12 to 16 years of age (Ostergaard & others, 2017)
- Coverage of a recent research review that concluded stimulation medications are effective in treating children with ADHD in the short term, but long-term benefits of such medications are not clear (Rajeh & others, 2017)
- Inclusion of a recent meta-analysis that concluded physical exercise is effective in reducing cognitive symptoms of ADHD in individuals 3 to 25 years of age (Tan, Pooley, & Speelman, 2016)
- Coverage of a recent meta-analysis in which exercise was associated with better executive function in children with ADHD (Vysniauske & others, 2018)
- Description of a recent study in which an 8-week yoga program improved the sustained attention of children with ADHD (Chou & Huang, 2017)
- Inclusion of recent commentary concluding that despite positive research findings using neurofeedback, mindfulness training, and exercise to improve the attention of children with ADHD, it remains to be determined if these interventions are as effective as stimulant drugs and/or whether they benefit children as add-ons to stimulant drugs (Den Heijer & others, 2017)
- Updated data on the increasing percentage of children who are diagnosed with autism spectrum disorders (Christensen & others, 2016)
- Inclusion of a recent study that revealed a lower level of working memory was the executive function most strongly associated with autism spectrum disorders (Ziermans & others, 2017)
- New coverage of two recent surveys in which only a minority of parents reported that their child's autism spectrum disorder was identified prior to 3 years of age and that one-third to one-half of the cases were identified after 6 years of age (Sheldrick, Maye, & Carter, 2017)
- Discussion of a recent study in which children's verbal working memory was linked to these aspects of both first and second language learners: morphology, syntax, and grammar (Verhagen & Leseman, 2016)
- Inclusion of recent research that found mindfulness-based intervention improved children's attention self-regulation (Felver & others, 2017)
- Description of the most recent revision of the Wechsler Intelligence Scale for Children–V and its increased number of subtests and composite scores (Canivez, Watkins, & Dombrowski, 2017)
- Coverage of recent research that found a significant link between children's general intelligence and their self-control (Meldrum & others, 2017)
- Discussion of a recent two-year intervention with families living in poverty in which maternal scaffolding and positive home stimulation improve young children's intellectual functioning (Obradovic & others, 2016)
- New content on stereotype threat in the section on cultural bias in intelligence tests (Grand, 2017; Lyons & others, 2018; Williams & others, 2018)
- Update on the percentage of U.S. students who are classified as gifted (National Association for Gifted Children, 2017)
- New commentary that vocabulary development plays an important role in reading comprehension (Vacca & others, 2018)
- New description of the importance of encouraging students to monitor their writing progress (Graham & Harris, 2017; Harris & Graham, 2017)
- Coverage of a recent study of 6- to 10-year-old children that found early bilingual exposure was a key factor in bilingual children outperforming monolingual children on tests of phonological awareness and word learning (Jasinska & Petitto, 2018)
- Discussion of research that found bilingual children were better at theory of mind tasks than monolingual children were (Rubio-Fernandez, 2017)

Chapter 10: Socioemotional Development in Middle and Late Childhood

- New description of recent research studies indicating that children and adolescents who do not have good perspective-taking skills are more likely to have difficulty in peer relations and engage in more aggressive and oppositional behavior (Morosan & others, 2017; Nilsen & Basco, 2017; O'Kearney & others, 2017)
- Inclusion of a longitudinal study that revealed the quality of children's home environment (which involved assessment of parenting quality, cognitive stimulation, and the physical home environment) was linked to self-esteem in early adulthood (Orth, 2017)
- New discussion of a recent book, *Challenging the Cult of Self-Esteem in Education* (Bergeron, 2018), that criticizes education for promising high self-esteem for students, especially those who are impoverished or marginalized
- Coverage of a longitudinal study that found a higher level of self-control in childhood was linked to a slower pace of aging at 26, 32, and 38 years of age (Belsky & others, 2017)
- New description of an app that is effective in improving children's self-control: www.selfregulationstation.com/sr-ipad-app/
- New discussion of a longitudinal study in which a higher level of emotion regulation in early childhood was linked to a higher level of externalizing problems in adolescence (Perry & others, 2017)

- New section, “Social-Emotional Education Programs,” that describes two increasingly implemented programs: (1) Second Step (Committee for Children, 2018) and (2) Collaborative for Academic, Social, and Emotional Learning (CASEL, 2018)
- Substantial revision of the discussion of Kohlberg’s theory of moral development to make it more concise and clear
- Expanded and updated discussion of Darcia Narváez’s emphasis on the need to make better progress in dealing with an increasing array of temptations and possible wrongdoings in a human social world that is becoming more complex over time (Christen, Narváez, & Gutzwiller, 2018)
- Inclusion of a recent study of individuals from adolescence through middle adulthood that revealed as they got older their external moral identity motivation decreased while their internal moral identity motivation increased (Krettenauer & Victor, 2017)
- Discussion of a recent study with eighth-grade students in 36 countries that revealed girls had more egalitarian attitudes about gender roles than boys did (Dotti Sani & Quaranta, 2015)
- Inclusion of recent research indicating that when children have a better parent-child affective relationship with their stepparent, the children have fewer internalizing and externalizing problems (Jensen & others, 2018)
- Coverage of a recent study of young adolescents in which peer rejection predicted increases in aggressive and rule-breaking behavior (Janssens & others, 2017)
- Substantial expansion and updating of information on bullying and cyberbullying (Hall, 2017; Muijs, 2017; Zarate-Garza & others, 2017)
- Description of a longitudinal study that revealed children who were bullied at 6 years of age were more likely to have excess weight gain at age 12 to 13 (Sutin & others, 2016)
- Inclusion of a longitudinal study that revealed being a victim of bullying in childhood was linked to increased use of mental health services five decades later (Evans-Lacko & others, 2017)
- Description of recent longitudinal studies that indicated victims bullied in childhood and adolescence have higher rates of agoraphobia, depression, anxiety, panic disorder, and suicidality in their early to mid-twenties (Arseneault, 2017; Copeland & others, 2013)
- Coverage of recent research in which adolescents who were bullied both directly and through cyberbullying had more behavioral problems and lower self-esteem than their counterparts who were only bullied in one of the two ways (Wolke, Lee, & Guy, 2017)
- Inclusion of a 2018 update on the Every Student Succeeds Act (ESSA), indicating that the Trump administration was going forward with ESSA but giving states much more flexibility in its implementation (Klein, 2018a, b)
- Discussion of a recent intervention (City Connects program) with first-generation immigrant children attending high-poverty schools that was successful in improving the children’s reading and math skills (Dearing & others, 2016)
- New coverage of a recent research review that concluded increases in family income for children in poverty were linked to increased achievement in middle school, as well as higher educational attainment in adolescence and emerging adulthood (Duncan, Magnuson, & Votruba-Drzal, 2017)
- New content on Teach for America (2018) and its efforts to place college graduates in teaching positions in schools located in low-income areas and inclusion of a new Connecting with Careers feature on Teach for America instructor Ahou Vaziri
- Coverage of recent research indicating that many parents and teachers with growth mindsets don’t have children and adolescents with growth mindsets (Haimovitz & Dweck, 2017)
- New research that indicates that parents and teachers can create growth mindsets in children and adolescents by doing the following things: teach for understanding, provide feedback that improves understanding, give students opportunities to revise their work, communicate how effort and struggling are involved in learning, and function as partners with children and adolescents in the learning process (Hooper & others, 2016; Sun, 2015)
- Inclusion of recent research that found students from lower-income families were less likely to have a growth mindset than were students from wealthier families but the achievement of students from lower-income families was more likely to be protected if they had a growth mindset (Claro, Paunesku, & Dweck, 2016)
- Updated data on U.S. students’ math and science achievement in comparison with their counterparts in other countries (Desilver, 2017; PISA, 2015: TIMSS, 2015)
- Discussion of a recent study in China that found young adolescents with authoritative parents showed better adjustment than their counterparts with authoritarian parents (Zhang & others, 2017)

Chapter 11: Physical and Cognitive Development in Adolescence

- Coverage of a recent study of non-Latino White and African American 12- to 20-year-olds in the United States that found they were characterized much more by positive than problematic development (Gutman & others, 2017). Their engagement in healthy behaviors, supportive relationships with parents and friends, and positive self-conceptions were much stronger than their angry and depressed feelings.
- New discussion of three recent studies in Korea and Japan (Cole & Mori, 2018), China (Song & others, 2017), and Saudi Arabia (Al Alwan & others, 2017), all of which found secular trends of earlier pubertal onset in recent years
- Inclusion of research in which onset of menarche before 11 years of age was linked to a higher incidence of distress disorders, fear disorders, and externalizing disorders in females (Platt & others, 2017)
- Description of a recent study that linked childhood sexual abuse to earlier pubertal onset (Noll & others, 2017)
- Coverage of a recent study that found early-maturing girls had higher than average rates of depression and antisocial age as middle-aged adults mainly because their difficulties began in adolescence and did not lessen over time (Mendle & others, 2018)
- New research indicating that early-maturing girls are at increased risk for physical and verbal abuse in dating (Chen, Rothman, & Jaffee, 2018)

- New summary of the influence of early and late maturation on adolescent development
- New content on the role of social media and the Internet in influencing adolescents' body images, including one study of U.S. 12- to 14-year-olds that found heavier social media use was associated with body dissatisfaction (Burnette, Kwitowski, & Mazzeo, 2017)
- Inclusion of a recent study of U.S. college women that found more time on Facebook was related to more frequent body and weight concern related to comparison with other women, more attention to the physical appearance of others, and more negative feelings about their own bodies (Eckler, Kalyango, & Paasch, 2017)
- New research that revealed young adolescent boys had a more positive body image than their female counterparts (Morin & others, 2017)
- Description of recent research in which reduced connectivity between the brain's frontal lobes and amygdala during adolescence was linked to increased depression (Scheur & others, 2017)
- Coverage of a longitudinal study that found 11- to 18-year-olds who lived in poverty conditions had diminished brain functioning at 25 years of age (Brody & others, 2017). However, those adolescents whose families participated in a supportive parenting intervention did not show this diminished brain functioning.
- New discussion of two recent studies of sexting, one indicating the frequency of sexting by high school students (Strassberg, Cann, & Velarde, 2017), the other documenting that for Latino adolescents, sexting is associated with engaging in oral, vaginal, and anal sex (Romo & others, 2017)
- Updated data on the occurrence of various sexual activities by adolescents according to age, gender, and ethnicity, including updates for Figure 5 (Kann & others, 2016a)
- New commentary that while the majority of sexual minority adolescents have competent and successful developmental paths through adolescence, a recent large-scale study revealed that sexual minority youth have a higher prevalence of health-risk factors than non-sexual-minority youth (Kann & others, 2016b)
- Updated data on the percentage of adolescent males and females who engage in oral sex (Child Trends, 2015)
- Description of a recent study that found that early sexual debut was associated with a number of problems, including sexual risk taking, substance use, violent victimization, and suicidal thoughts and attempts in both sexual minority and heterosexual adolescents (Lowry & others, 2017)
- Discussion of a recent study of Korean girls in which early menarche was associated with earlier initiation of sexual intercourse (Kim & others, 2017)
- Inclusion of recent research in which adolescents who in the eighth grade reported greater parental knowledge and more rules about dating were less likely to initiate sex between the eighth and tenth grade (Ethier & others, 2016)
- Description of a recent study of African American girls that revealed those for whom religion was very or extremely important were much more likely to have a later sexual debut (George Dalmida & others, 2018)
- Updated data on the percentage of adolescents who use contraceptives when they have sexual intercourse (Kann & others, 2016a)
- Updated data on the continued decline in adolescent pregnancy to a historic low in 2015 (Martin & others, 2017)
- Important new section on the increasing number of medical organizations and experts who have recently recommended that adolescents use long-acting reversible contraception (LARC), which consists of intrauterine devices (IUDs) and contraceptive implants (Allen & others, 2017; Diedrich, Klein, & Peipert, 2017; Society for Adolescent Medicine, 2017)
- New research on factors that are linked to repeated adolescent pregnancy (Dee & others, 2017; Maravilla & others, 2017)
- Inclusion of recent studies and research views that find comprehensive sex education programs and policies are far more effective in pregnancy prevention, reduction of sexually transmitted infections, and delay of sexual intercourse than are abstinence-only programs and policies (Denford & others, 2017; Jaramillo & others, 2017; Santelli & others, 2017)
- New content on the recent increase in abstinence-only-until-marriage (AOUM) policies and programs in the United States that don't seem to recognize that a large majority of adolescents and emerging adults will initiate sexual intercourse, especially given the recent increase in the age at which U.S. males and females get married (Society of Adolescent Health and Medicine, 2017)
- Updated data on the percentage of U.S. adolescents who are obese (Centers for Disease Control and Prevention, 2016)
- Updated national data on adolescents' exercise patterns, including gender and ethnic variations (Kann & others, 2016a)
- Updated data on the significant gender differences in exercise in adolescence, with females exercising far less than males (YRBSS, 2016)
- Coverage of recent research indicating that a combination of regular exercise and a diet plan results in weight loss and enhanced executive function in adolescents (Xie & others, 2017)
- Description of a recent research review concluding that among a number of cognitive factors, memory was the factor that was most often improved by exercise in adolescence (Li & others, 2017)
- Update on the low percentage of adolescents who get 8 hours of sleep or more per night (Kann & others, 2016a)
- Discussion of a recent experimental study in which adolescents' sleep was restricted to five hours for five nights, then restored to ten hours for two nights, which negatively affected their sustained attention, especially in the early morning (Agostini & others, 2017)
- Inclusion of a recent national study of more than 10,000 13- to 18-year-olds that revealed that a number of factors involving sleep timing and duration were associated with an increased rates of anxiety, mood disorders, substance abuse, and behavioral disorders (Zhang & others, 2017)

- Description of a recent study of college students that revealed consistently low sleep duration was associated with less effective attention the next day (Whiting & Murdock, 2016)
- Discussion of a recent study of college students that found a higher level of text messaging activity during the day and at night was related to a lower level of sleep quality (Murdock, Horissian, & Crichlow-Ball, 2017)
- Inclusion of new content indicating increasing concern about the rising number of adolescents who mix alcohol and energy drinks, a practice that is linked to higher rates of risky driving (Wilson & others, 2018)
- Updated coverage of the Monitoring the Future study's assessment of drug use by secondary school students, with 2017 data on U.S. eighth-, tenth-, and twelfth-graders (Johnston & others, 2018). Included in the update is an important discussion of how the increase in adolescent use of illicit drugs in the last decade is due to the increased use of marijuana by adolescents.
- Updated coverage of the Monitoring the Future study's assessment of adolescents' frequency of vaping nicotine, which now is occurring more frequently than adolescents' cigarette smoking (Johnston & others, 2018)
- Description of a recent meta-analysis of longitudinal studies that found when adolescents use e-cigarettes they are at increased risk for subsequent cigarette smoking (Soneji & others, 2018)
- Inclusion of recent research in which parental monitoring was linked to a lower level of polysubstance use by adolescents (Chan & others, 2017)
- Description of a recent intervention study that revealed Latino parents who had participated in a program that emphasized the importance of parental monitoring had adolescents who engaged in lower levels of drug use than a control group of adolescents whose parents had not participated in the program (Estrada & others, 2017)
- Discussion of a recent large-scale national study in which friends' alcohol use was a stronger influence on adolescents' alcohol use than parental use (Deutsch, Wood, & Slutske, 2018)
- New research indicating that having an increase in Facebook friends across two years in adolescence was linked to an enhanced motivation to be thin (Tiggemann & Slater, 2017)
- Coverage of a recent study in which greater use of social networking sites was linked to increased narcissism (Gnambs & Appel, 2018)
- Inclusion of new information from the Bill and Melinda Gates Foundation (2017, 2018) indicating that many adolescents graduate from high school without obtaining the necessary academic skills to succeed in college or to meet the demands of the modern workplace
- Updated data on school dropouts, including the dramatic decrease in dropout rates for Latino adolescents in recent years (National Center for Education Statistics, 2017)
- Inclusion of new information on the Bill and Melinda Gates Foundation's (2011, 2016) funding of a new generation of digital courseware to improve students' learning
- Updates on expansion of "I Have a Dream" programs to encompass 28 states plus Washington, DC, and New Zealand ("I Have a Dream Foundation," 2017)

Chapter 12: Socioemotional Development in Adolescence

- Coverage of research indicating that low self-esteem in early adolescence predicted depressive symptoms in late adolescence and emerging adulthood (Messelink, Van Roekel, & Oldehinkel, 2018)
- New discussion of recent longitudinal studies that revealed the ethnic identity of adolescents is influenced by positive and diverse friendships (Rivas-Drake & others, 2017; Santos & others, 2017) Description of a recent study that revealed high school students who reported turning to spiritual beliefs when they were experiencing problems were less likely to engage in substance use (Debnam & others, 2018)
- Discussion of a recent study across three countries (England, Scotland, and Canada) in which adolescents who reported having a higher level of spirituality were more likely to have positive health outcomes (Brooks & others, 2018)
- Description of a recent study of Chinese American families that found parent-adolescent conflict increased in early adolescence, peaked at about 16 years of age, and then declined through late adolescence and emerging adulthood (Juang & others, 2018)
- Inclusion of recent research with fifth- to eighth-graders in which a higher level of parental monitoring was associated with students' having higher grades (Top, Liew, & Luo, 2017)
- Coverage of a study that found adolescents with high levels of depressed mood were likely to engage in drinking when their parents engaged in parental monitoring (Kelly, Becker, & Spirito, 2017). However, in this study, parents with a high level of depressed mood were less likely to monitor their adolescents effectively than their counterparts who were less depressed.
- Inclusion of a recent study that revealed from 16 to 20 years of age, adolescents perceived that they had increasing independence and a better relationship with their parents (Hadiwijaya & others, 2017)
- Discussion of a recent study of Latino families that revealed a higher level of secure attachment with mothers during adolescence was linked to a lower level of heavy drug use (Gattamorta & others, 2017)
- Coverage of a recent longitudinal study that found a secure base of attachment knowledge in adolescence and emerging adulthood was predicted by observations of maternal sensitivity across childhood and adolescence (Waters, Ruiz, & Roisman, 2017)
- Discussion of a recent study that found boys were more likely to be influenced by peer pressure involving sexual behavior than were girls (Widman & others, 2016)
- Description of recent research in which adolescents adapted their smoking and drinking behavior to that of their best friends (Wang & others, 2016)
- Inclusion of recent research on adolescent girls that found friends' dieting predicted whether adolescent girls would engage in dieting or extreme dieting (Balantekin, Birch, & Savage, 2018)

- Discussion of a recent study indicating that friendship quality was linked to the quality of romantic relationships in adolescence (Kochendorfer & Kerns, 2017)
- Inclusion of recent research in which having a supportive romantic relationship in adolescence was linked with positive outcomes for adolescents who had a negative relationship with their mothers (Szwedo, Hessel, & Allen, 2017)
- Discussion of recent research that revealed mother-daughter conflict in Mexican American families was linked to an increase in daughters' romantic involvement (Tyrell & others, 2016)
- New main section on "Socioeconomic Status and Poverty"
- Inclusion of a recent study that found of 13 risk factors, low SES was the most likely to be associated with smoking initiation in fifth graders (Wellman & others, 2017)
- Discussion of a recent Chinese study in which adolescents in low-SES families were more likely to have depressive symptoms (Zhou, Fan, & Yin, 2017)
- Coverage of a U.S. longitudinal study that revealed low SES in adolescence was linked to having a higher level of depressive symptoms at age 54 for females (Pino & others, 2018). In this study, low-SES females who had completed college were less likely to have depressive symptoms than low-SES females who had not completed college.
- Inclusion of a U.S. longitudinal study that found low SES in adolescence was a risk factor for cardiovascular disease 30 years later (Doom & others, 2017)
- Coverage of a recent study of 12- to 19-year-olds that found their perceived well-being was lowest when they had lived in poverty from 0 to 2 years of age (compared with 3 to 5, 6 to 8, and 9 to 11 years of age) and also indicating that each additional year lived in poverty was associated with lower perceived well-being in adolescence (Garipey & others, 2017)
- Description of a recent study that found these four psychological and social factors predicted higher achievement by adolescents living in poverty: (1) academic commitment, (2) emotional control, (3) family involvement, and (4) school climate (Li, Allen, & Casillas, 2017)
- Description of a recent study comparing Asian, Latino, and non-Latino immigrant adolescents in which immigrant Asian adolescents had the highest level of depression, lowest self-esteem, and experienced the most discrimination (Lo & others, 2017)
- New discussion of various ways that stress can negatively influence the development of ethnic minority families and adolescents (Davis & others, 2018)
- Inclusion of a recent study of Mexican-origin youth that revealed when adolescents reported a higher level of familism, they engaged in lower levels of risk taking (Wheeler & others, 2017)
- Description of a recent study in which night-time mobile phone use and poor sleep behavior increased from 13 to 16 years of age (Vernon, Modecki, & Barber, 2018)
- Discussion of a recent study in which heavy media multitaskers were less likely to delay gratification and more likely to endorse intuitive, but wrong, answers on a cognitive reflection task (Schutten, Stokes, & Arnell, 2017)
- Coverage of recent research that found less screen time was linked to adolescents' better health-related quality of life (Wang & others, 2018) and that a higher level of social media use was associated with a higher level of heavy drinking by adolescents (Brunborg, Andreas, & Kvaavik, 2017)
- Updated data on the percentage of adolescents who use social networking sites and engage in text messaging daily (Lenhart, 2015; Lenhart & others, 2015)
- Updated statistics on the decline in U.S. juvenile delinquency cases (Hockenberry & Puzanchera, 2017)
- Inclusion of a recent study of more than 10,000 children and adolescence which found that living in a family environment characterized by poverty and child maltreatment was linked to increased risk of entering the juvenile justice system in adolescence (Vidal & others, 2017)
- Description of a recent study of middle school adolescents that found peer pressure for fighting and friends' delinquent behavior were linked to adolescents' aggression and delinquent behavior (Farrell, Thompson, & Mehari, 2017)
- Inclusion of recent research in which adolescent males with callous-unemotional traits were at increased risk of engaging in delinquency (Ray & others, 2017)
- New content indicating that at 12 years of age, 5.2 percent of females and 2 percent of males had experienced first-onset depression (Breslau & others, 2017). Also in this study, the cumulative incidence of depression from 12 to 17 years of age was 36 percent for females and 14 percent for boys.
- Recent research that found co-rumination with friends was linked to greater peer stress for adolescent girls (Rose & others, 2017)
- Discussion of recent research indicating that family therapy can be effective in reducing adolescent depression (Poole & others, 2018)
- Inclusion of a recent study that revealed adolescents who were isolated from their peers and whose caregivers emotionally neglected them were at significant risk for developing depression (Christ, Kwak, & Lu, 2017)
- Description of a recent meta-analysis in which adolescent females who were obese were more likely to have depression (Quek & others, 2017)
- Inclusion of recent research indicating that adolescents who were being treated in a suicide clinic experienced lower family cohesion than nonclinical adolescents and adolescents going to a general psychiatric clinic (Jakobsen, Larsen, & Horwood, 2017)
- Updated data on the percentage of U.S. adolescents who seriously consider suicide each year (Kann & others, 2016a)
- Discussion of recent research indicating that the most significant factor in a first suicide attempt during adolescence was major depressive episode, while for children it was child maltreatment (Peyre & others, 2017)
- Description of two recent studies that revealed maltreatment during the childhood years was linked with suicide attempts in adulthood (Park, 2017; Turner & others, 2017)

- Inclusion of a recent study that found a sense of hopelessness predicted an increase in suicidal ideation in depressed adolescents (Wolfe & others, 2018)
- New coverage of the most recent research on Fast Track in which one-third of its reduction in later crime outcomes in emerging adulthood were accounted for by improvements in social and self-regulation skills at 6 to 11 years of age (Sorensen, Dodge, and the Conduct Problems Prevention Research Group, 2016)

Chapter 13: Physical and Cognitive Development in Early Adulthood

- New coverage of Seth Schwartz's (2016) view that emerging adulthood is a two-sided coin in which an individual can experience and pursue positive improvements in their life and well-being or experience downward turns in their life and well-being
- New section, "The Changing Landscape of Emerging and Early Adulthood," that describes how today's emerging and young adults have very different profiles and experiences in education, work, and lifestyles compared with their counterparts from earlier generations (Vespa, 2017)
- Inclusion of recent research indicating that recent cohorts of emerging adults seem more reluctant to mature than earlier cohorts (Smith & others, 2018)
- Description of a national longitudinal study of emerging adult health lifestyles in which three clusters involved whether individuals smoked or not, engaged in binge drinking or not, were obese or not, and exercised regularly or were sedentary: (1) consistently healthy lifestyle, (2) consistently unhealthy lifestyle, and (3) shifting lifestyle over time (Daw, Margolis, & Wright, 2017)
- Inclusion of a recent study with U.S. community college students that found they believe they will be an adult when they are able to care for themselves and others (Katsiaficas, 2017)
- New coverage of recent trends in first-year college students' increasing motivation to be well-off financially, as well as their increased reports of feeling overwhelmed with what they have to do, depressed, and anxious (Eagan & others, 2017)
- Discussion of a recent study in which a higher level of energy drink consumption was linked to more sleep problems in college students (Faris & others, 2017)
- Updated data on the incidence of obesity in U.S. adults (Flegal & others, 2016)
- Discussion of recent international comparisons of 33 countries in which the United States had the highest percentage of obese adults (38.2 percent) and Japan the lowest percentage (3.7); the average of the countries was 23.2 percent of the population being obese (OECD, 2017)
- New section on binge-eating disorder (Browley & others, 2017; Stice & others, 2017; Wilfley, Fitzsimmons-Craft, & Eichen, 2017)
- Inclusion of a recent study in which individuals with BED were more likely to come from families with ineffective functioning, especially in the area of emotional involvement (Tetzlaff & others, 2017)
- Description of cognitive behavior therapy and interpersonal therapy as the most strongly supported therapies for treating binge eating disorder (Grilo, 2017)
- Inclusion of a research review that concluded studies in which individuals are randomly assigned to engage in exercise have shown exercise and pharmacological treatments are equally effective in treating depression (Netz, 2017)
- Coverage of a recent meta-analysis in which moderate and vigorous aerobic exercise resulted in a lower incidence of major depressive disorder (Schuch & others, 2016b)
- Discussion of a national survey that revealed individuals with higher levels of physical activity and cardiovascular fitness were less likely to have depressive symptoms (Loprinzi & others, 2017)
- Description of a recent study that found higher screen time by parents was linked to both parents' and children's higher waist-to-height ratio (Dong & others, 2017)
- Inclusion of recent research that revealed a mortality risk reduction for individuals who replaced screen time with an increase in daily activity levels (Wijndaele & others, 2017)
- Updated data on binge drinking in college and through early adulthood, including new Figure 3 (Schulenberg & others, 2017)
- Updated data on extreme binge drinking in college students, including data on not only 10 or more drinks at one time in the last two weeks, but also 15 or more in the same time frame (Schulenberg & others, 2017)
- Inclusion of a longitudinal study that revealed frequent binge drinking and marijuana use in the freshman year of college predicted delayed college graduation (White & others, 2018)
- Coverage of a recent study in which pregaming occurred more frequently in college women when they drank alcohol mixed with energy drinks (Linden-Carmichael & Lau-Barraco, 2017)
- Description of a recent U.S. national study of more than 43,000 adults that found between 2001–2002 and 2012–2013, high-risk drinking and alcohol use disorder increased more in women, older adults, ethnic minorities, and individuals from low socioeconomic groups (Grant & others, 2017)
- Updated data on the continuing decline in smoking by U.S. adults, including new data indicating 480,000 individuals in the U.S. die each year because of smoking, a figure that includes 41,000 individuals who die each year as a result of secondhand smoke (Centers for Disease Control and Prevention, 2018a)
- Updated data on the percentage of individuals in emerging adulthood and early adulthood who are using electronic vaporizers (which include e-cigarettes) (Schulenberg & others, 2017)
- Inclusion of recent research in which sexual activity in adults on day 1 was linked to greater well-being the next day (Kashdan & others, 2018). In this study, higher reported sexual pleasure and intimacy predicted more positive affect and less negative affect the next day.

- Coverage of a recent research review that concluded a sexual double standard continues to exist, with stricter social norms for female sexuality (Boislard, van de Bongardt, & Blais, 2016)
- New research indicating that suicidal ideation was associated with entrance into a friends-with-benefits (FWB) relationship as well as continuation of the FWB relationship (Dube & others, 2017)
- Updated data based on a national survey that found 3.8 percent of U.S. adults reported that they were gay, lesbian, bisexual, or transsexual (Gallup, 2015)
- New commentary that whether an individual is heterosexual, gay, lesbian, or bisexual, the person cannot be talked out of his or her sexual orientation (King, 2017).
- Updated statistics on HIV/AIDS in the United States (Centers for Disease Control and Prevention, 2018) and around the world (UNAIDS, 2017)
- New description of a recent study of 1,423 four-year universities in which those with higher tuition, more liquor violations, and greater numbers of fraternity men and athletes were more likely to report rape on their campuses (Wiersma-Mosley, Jozkowski, & Martinez, 2017)
- New coverage of the “Me Too” movement and sexual harassment
- New discussion of a study that found the search for and presence of meaning was linked to wisdom in emerging adults (Webster & others, 2018)
- Updated data on the percentage of full-time and part-time college students who work, which has decreased slightly in recent years (Condition of Education, 2017)
- Updated data on the average number of hours U.S. adults work per week (Saad, 2014)
- Updated data from a recent survey in which employers said that 2017 was the best year since 2007 for recent college graduates to enter the job market (CareerBuilder, 2017)
- Inclusion of recent research in which an increase in job strain increased workers’ insomnia while a decrease in job strain reduced their insomnia (Halonon & others, 2018)
- Description of a recent study that found depression following job loss predicted increased risk of continued unemployment (Stolove, Galatzer-Levy, & Bonanno, 2017)
- Coverage of a study that revealed heavy drinking from age 16 to 30 was linked to higher unemployment in middle age (Berg & others, 2018)

Chapter 14: Socioemotional Development in Early Adulthood

- Description of a longitudinal study in which disinhibition in childhood predicted self-efficacy in adulthood (Blatny & others, 2015)
- Coverage of a longitudinal study that tracked participants from 8 to 35 years of age and found relative to a low-stable trajectory, an increasing trajectory of shyness was linked to social anxiety, mood, and substance use disorders in adulthood (Tang & others, 2017)
- New content based on a longitudinal study that revealed emotional dysregulation in the fifth grade was linked to engaging in violent crimes at 22 to 23 years of age (Kalvin & Bierman, 2017)
- Inclusion of a longitudinal study of participants from 13 to 72 years of age in which avoidant attachment declined across the lifespan and being in a relationship predicted lower levels of anxious and avoidant attachment across adulthood (Chopik, Edelstein, & Grimm, 2018)
- Description of a study in which attachment-anxious individuals had higher levels of health anxiety (Mauder & others, 2017)
- Coverage of a recent research review that concluded insecure attachment in adulthood was linked to a higher level of social anxiety (Manning & others, 2017)
- Updated data on the number of Americans who have tried Internet matchmaking, and gender differences in the categories males and females lie about in Internet matchmaking forums (statisticbrain.com, 2017)
- Description of recent research on how romantic relationships change in emerging adulthood, including different characteristics of adolescent and emerging adult romantic relationships (Lantagne, Furman, & Novak, 2017)
- New section, “Relationship Education for Adolescents and Emerging Adults,” that examines the increasing number of relationship education programs for adolescents and emerging adults, describes their main components, and evaluates their effectiveness (Hawkins, 2018; Simpson, Leonhardt, & Hawkins, 2018)
- Inclusion of data from the recent Match.com Singles in America 2017 national poll that describes Millennials’ interest in having sex before a first date, interest in marrying but taking considerable time to get to know someone before committing to a serious relationship, and males’ interest in having females initiate the first kiss and ask a guy for his phone number (Match.com, 2017)
- Updated data on the percentage of U.S. adults who are single (U.S. Census Bureau, 2017)
- Updated data on the percentage of U.S. adults who are cohabiting, which increased to 18 million people in 2016, an increase of 29 percent since 2007 (Stepler, 2017; U.S. Census Bureau, 2016)
- Inclusion of recent research indicating that women who cohabited within the first year of a sexual relationship were less likely to get married than women who waited more than one year before cohabiting (Sassler, Michelmores, & Qian, 2018)
- Coverage of a recent study in which cohabiting individuals were not as mentally healthy as their counterparts in committed marital relationships (Braithwaite & Holt-Lunstad, 2017)
- Description of a recent study of long-term cohabitation (more than 3 years) in emerging adulthood that found emotional distress was higher in long-term cohabitation than in time spent single, with men especially driving the effect (Memitz, 2018). However, heavy drinking was more common in time spent single than in long-term cohabitation.
- Updated data on the percentage of U.S. adults who are married (Parker & Stepler, 2017)

- Updated data on the continued trend to wait longer before getting married in the United States, with the age at first marriage now at 29.5 years for men and 27.4 years for women (Livingston, 2017)
- Movement of section on gender and friendships from the section on love to the new section on “Gender Relationships”
- New section, “Cross-Cultural Differences in Romantic Relationships” that includes comparisons of collectivist and individualist cultures (Gao, 2016) as well as intriguing comparisons of romantic relationships in Japan, Brazil, France, and Qatar (Ansari, 2015)
- Inclusion of a large-scale study that revealed experiencing a romantic breakup lowered individuals’ self-esteem but that the effect disappeared one year after the breakup (Luciano & Orth, 2017)
- New discussion of the marriage paradox including research showing that emerging adults may not be abandoning marriage because they don’t like marriage or are disinterested in it, but are delaying marriage because they want to position themselves in the best possible way for developing a healthy marital relationship (Willoughby, Hall, & Goff, 2015; Willoughby & James, 2017)
- Coverage of a recent study of married, divorced, widowed, and single adults that revealed married individuals had the best cardiovascular profile; single men the worst (Manfredini & others, 2017)
- Inclusion of a recent study in Great Britain that found no differences in the causes of breakdowns in marriage and cohabitation (Gravningen & others, 2017). In this study, “grew apart,” “arguments,” “unfaithfulness/adultery,” “lack of respect, appreciation,” and “domestic violence” were the most frequent reasons given for such breakdowns.
- Description of a study of individuals one to 16 years into their marriage that found an increasing trajectory of tension over the course of the marriage was consistently linked to an eventual divorce (Birditt & others, 2017)
- Updated statistics on divorce rates around the world, with Russia continuing to have the highest rate (OECD, 2016)
- Coverage of a study that found individuals who were divorced had a higher risk of having alcohol use disorder (Kendler & others, 2017)
- Inclusion of recent data indicating that the remarriage rate for men is almost twice as high as it is for women (Livingston, 2017)
- Updated data on the average age at which U.S. women first give birth, which occurred more frequently in their thirties than in their twenties in 2016 for the first time ever, with an average age of 27 for first-time mothers in 2016 (Centers for Disease Control and Prevention, 2017)
- New research that found the frequency of sexual intercourse in the second to fourteenth years of a marriage was important to marital satisfaction, but that a satisfying sex life and a warm interpersonal relationship were more important (Schoenfeld & others, 2017)
- New main section, “Gender Communication, Relationships, and Classification”
- Extensive new content on transgender (Budge & Orovecz, 2017; Budge & others, 2018a, b; Katz-Wise & others, 2018)
- Discussion of a variety of terms used to describe transgender individuals
- New content indicating that it is much more common to have a transgender identity of being born male but identifying with being a female than the reverse (Zucker, Lawrence, & Kreukels, 2016)
- Discussion of a recent research review that concluded transgender youth have higher rates of depression, suicide attempts, and eating disorders than their non-transgender peers (Connolly & others, 2016)

Chapter 15: Physical and Cognitive Development in Middle Adulthood

- Inclusion of a recent research review that found positive subjective time perceptions were linked to better health and well-being while negative subjective time perceptions were associated with lower levels of health and well-being (Gabrian, Dutt, & Wahl, 2017)
- Description of a recent study in which undergraduate students were shown a computer-generated graph of a person identified as a younger adult, middle-aged adult, or older adult (Kelley, Soboroff & Lovaglia, 2017). When asked which person they would choose for a work-related task, they selected the middle-aged adult most often.
- New commentary about how neurobiological functioning slowly declines in middle age, but competence at work and completing life’s everyday tasks usually show little or no decline. Also, because of a sense of urgency, many adults may do their best work in middle age.
- Update on the percentage of adults 40 to 59 years of age classified as obese (40.2 percent) Centers for Disease Control and Prevention, 2016)
- Coverage of recent research in which an increase in weight gain from early to middle adulthood was linked to an increased risk of major chronic diseases and unhealthy aging (Zheng & others, 2017)
- Inclusion of recent research that revealed greater intake of fruits and vegetables was linked to increased bone density in middle-aged and older adults (Qui & others, 2017)
- Discussion of a Chinese study that found men and women who gained an average of 22 pounds or more from 20 to 45–60 years of age had an increased risk of hypertension and cholesterol, as well as elevated triglyceride levels in middle age (Zhou & others, 2018)
- Description of a recent study that revealed a healthy diet in adolescence was linked to a lower risk of cardiovascular disease in middle-aged women (Dahm & others, 2018)
- Inclusion of a 32-year study that found individuals who continued to have a lower socioeconomic status through the years of the study had a lower level of cardiovascular health than their counterparts whose SES improved across the study years (Savelieva & others, 2017)
- New coverage of the American Heart Association’s Life’s Simple 7—the seven factors that people need to optimize to improve their cardiovascular health
- Description of a study in which optimal Life’s Simple 7 at middle age was linked to better cardiovascular health recovery following a heart attack later in life (Mok & others, 2018)

- Inclusion of a longitudinal study in which increased respiratory fitness from early adulthood to middle adulthood was linked to less decline in lung health over time (Benck & others, 2017)
- New research indicating that perceiving oneself as feeling older predicted an increase in sleep difficulties in middle age over time (Stephan & others, 2017)
- Discussion of a recent study of young and middle-aged adults that found females had more sleep problems than males (Rossler & others, 2017). However, the good news in this study is that a majority of individuals (72 percent) reported that they did not have any sleep disturbances.
- New content on the important role of cortisol in stress and health (Leonard, 2018; Wichmann & others, 2017)
- Coverage of a recent study of men and women from 21 to 55 years of age in which married individuals had lower cortisol levels than their never-married or previously married counterparts (Chin & others, 2017)
- Inclusion of recent research indicating a bidirectional link between perceived control and health (Infurna & others, 2013; Robinson & Lachman, 2017)
- Discussion of a recent study that found the more frequently middle-aged and older adults had sex, the better their overall cognitive functioning was, and especially so in working memory and executive function (Wright, Jenks, & Demeyere, 2018)
- Coverage of a recent cross-cultural study in China that found Mosuo women had fewer negative menopausal symptoms and higher self-esteem than Han Chinese women (Zhang & others, 2016)
- Discussion of a recent study that revealed the more minutes per week women exercised during the menopausal transition, the lower their stress level was (Guerin & others, 2018)
- Description of the increased use of acupuncture to reduce negative symptoms of menopause (Lund & others, 2018)
- Inclusion of the recent position statement of the North American Menopause Society (2017) regarding the current status of research on various aspects of hormone replacement therapy (HRT)
- Inclusion of a consensus that there is a slight increase in breast cancer for women taking hormone replacement therapy (American Cancer Society, 2017; www.breastcancer.org, 2017)
- Discussion of recent studies and research reviews that indicate testosterone replacement therapy (TRT) does not increase the risk of prostate cancer (Debruyne & others, 2017; Yassin & others, 2017)
- Description of a recent study in which TRT-related benefits in quality of life and sexual function were maintained for 36 months after initial treatment (Rosen & others, 2017)
- Inclusion of recent research on 24- to 93-year-olds that found everyday problem solving performance increased from early to middle adulthood but began to show a decline at about 50 years of age (Chen, Hertzog, & Park, 2017). In this study, fluid intelligence predicted everyday problem-solving performance in young adults but, with increasing age, crystallized intelligence became a better predictor.
- Coverage of a Danish study across 33 years of individuals 20 to 93 years of age which found that those who engaged in a light level of leisure-time physical activity lived 2.8 years longer, those who engaged in a moderate level of leisure-time physical activity lived 4.5 years longer, and those who engaged in a high level of leisure-time physical activity lived 5.5 years longer (Schnohr & others, 2017)
- Updated data on the modest decline in the percentage of Americans who believe in God and think religion is very important in their lives (Pew Research Center, 2015)
- Inclusion of recent data on the percentage of women (60 percent) and men (47 percent) who say religion is very important in their lives (Pew Research Center, 2016)
- Discussion of a recent study that found spiritual well-being predicted which heart failure patients would still be alive five years later (Park & others, 2016)
- New research that indicated adults who volunteered had lower resting pulse rates and their resting pulse rate improved when they were deeply committed to religion (Krause, Ironson, & Hill, 2017)
- Coverage of a recent study of veterans with combat exposure in which those who engaged in negative religious coping were more likely to have posttraumatic stress disorder (PTSD) symptoms while those who engaged in positive religious coping were more likely to have perceived posttraumatic growth (PPTG) symptoms (Park & others, 2017)

Chapter 16: Socioemotional Development in Middle Adulthood

- Discussion of a recent study in which participating in an intergenerational civic engagement program enhanced older adults' self-perceptions of generativity (Gruenewald & others, 2016)
- Inclusion of recent research that found a higher level of generativity in middle age was linked to greater wisdom in late adulthood (Ardelt, Gerlach, & Vaillant, 2018)
- Coverage of a recent study of gender differences in coping with stress that revealed women were more likely than men to seek psychotherapy, talk to friends about the stress, read a self-help book, take prescription medication, and engage in comfort eating (Liddon, Kingerlee, & Barry, 2017). In this study, when coping with stress, men were more likely than women to attend a support group meeting, have sex or use pornography, try to fix problems themselves, and not admit to having problems.
- Discussion of recent research indicating that individuals high in conscientiousness, agreeableness, and extraversion live longer while those high in neuroticism die earlier (Graham & others, 2017)
- Description of recent research that found individuals high in openness to experience have superior cognitive functioning across the life span, have better health and well-being (Strickhouser, Zell, & Krizan, 2017), and are more likely to eat fruits and vegetables (Conner & others, 2017)
- Inclusion of recent research that found conscientiousness was linked to better health and well-being (Strickhouser, Zell, & Krizan, 2017), increased academic success in medical school (Sobowale & others, 2018), decreased addiction to Instagram (Kircaburun & Griffiths, 2018), lower risk for alcohol addiction (Raketic & others, 2017), and lower risk of dementia (Terracciano & others, 2017)

- Discussion of recent research indicating that people high in agreeableness have a lower risk of dementia (Terracciano & others, 2017)
- Description of recent research in which individuals who were higher in neuroticism had a higher risk of dementia (Terracciano & others, 2017)
- Inclusion of a recent research review in which the personality trait that changed the most as a result of psychotherapy was emotional stability, followed by extraversion (Roberts & others, 2017). In this study, the personality traits of individuals with anxiety disorders changed the most, those with substance use disorders the least.
- Inclusion of recent research in which more pessimistic college students had more anxious mood and stress symptoms (Lau & others, 2017)
- Discussion of a recent study of married couples that revealed the worst health outcomes occurred when both spouses decreased their optimism across a four-year period (Chopik, Kim, & Smith, 2018)
- Description of a recent study in which lonely individuals who were optimistic had a lower suicide risk (Chang & others, 2018)
- Inclusion of recent research with middle-aged adults that indicated positive marital quality was linked to better health for both spouses (Choi, Yorgason, & Johnson, 2016)
- New discussion of the increasing divorce rate in middle-aged adults and the reasons for the increase (Stepler, 2017), as well as the recent labeling of divorce in adults age 50 and older as “gray divorce” (Crowley, 2018)
- Coverage of a recent study of divorced adults 50+ years old that found divorce was more likely to occur if couples had been married fewer years, had a marriage of lower quality, did not own a home, and had financial problems (Lin & others, 2018)
- Description of a recent Swiss study of middle-aged adults in which single divorcees were more lonely and less resilient than their married and remarried counterparts (Knopfli & others, 2016). Also in this study, single divorcees had the lowest self-reported health.
- New commentary that grandparents play especially important roles in grandchildren’s lives when family crises such as divorce, death, illness, abandonment, or poverty occur (Dolbin-McNab & Yancura, 2017)
- New content on how grandparents in many countries facilitate women’s participation in the labor force
- Coverage of a recent study of adult grandchildren in which grandparents provided more frequent emotional support to the grandchildren when parents were having life problems and more frequent financial support when parents were unemployed (Huo & others, 2018)
- Description of the increasing percentage of grandparents who are raising grandchildren (U.S. Census Bureau, 2015).
- Discussion of a recent study that revealed parent and offspring marital disruptions were linked, with each parental disruption associated with a 16 percent increase in the number of offspring marital disruptions (Amato & Patterson, 2017). In this study, marital conflict also was related to more marital disruptions in offspring.
- Coverage of research indicating that when a grown child suffers problems, it decreases their parents’ well-being (Suitor & others, 2017). When more than one grown child have problems, parental well-being decreases further.
- Inclusion of recent research in which older adult fathers had elevated depressive symptoms when they reported having more negative relationships with their middle-aged children (Polenick & others, 2018). Also in this study, the association was stronger for older adult fathers and their middle-aged daughters, and the fathers had better health when they had better relationships with their daughters.
- Description of an intergenerational study of African Americans that found grown children who had a better relationship with their biological father (but not their social father) were more involved as fathers with their own children (Brown, Kogan, & Kim, 2018)
- Coverage of a recent Chinese intergenerational study in which sons were more likely to receive financial and helping/caring support from elderly parents (Chen & Jordan, 2018). Also in this study, sons were more likely to give financial support and daughters to give helping and caring support to elderly parents.

Chapter 17: Physical Development in Late Adulthood and Biological Aging

- Updated life expectancy rates for a number of developed countries (Central Intelligence Agency, 2015)
- Discussion of recent projections for life expectancy in 2030 in 35 developed countries, with the United States increasing in life expectancy but having one of the lowest projected increases of all countries in the study (Kontis & others, 2017). In this study, South Korea is expected to have the highest life expectancy of the 35 countries in 2030, with South Korean women the first group to break the 90-year barrier with a projected life expectancy of 90.8 in 2030.
- Life expectancy updates in the United States with gender and ethnic comparisons (U.S. Department of Health and Human Services, 2017)
- Coverage of a recent study of U.S. and Japanese centenarians that found in both countries, health resources (better cognitive function, fewer hearing problems, and positive daily living activities) were linked to a higher level of well-being (Nakagawa & others, 2018)
- New description of a study using the Chinese Longitudinal Healthy Longevity Survey that found severe loneliness at prior assessment points predicted poorer cognitive function at subsequent assessment points (Zhong & others, 2017)
- Update on the oldest living person in the world and in the United States in 2017
- Update on gender differences in the oldest people alive in the world today, with no men among the oldest 25 individuals
- Updated and expanded coverage of the diseases that are linked to mitochondrial dysfunction to include diabetic kidney disease (Forbes & Thorburn, 2018)
- Inclusion of recent research in which older adults lost significant excess weight and improved their mobility considerably by participating in a community-based weight reduction program (Rejeski & others, 2017)

- Updated information about diseases that women are more likely to die from than men are (Ostan & others, 2016)
- Discussion of a recent study that revealed long sleep duration predicted all-cause mortality in individuals 65 years and older (Beydoun & others, 2017)
- Coverage of a recent Korean study in which sleeping 9 hours a day or longer was linked to a higher incidence of sarcopenia (Kwon & others, 2017)
- Description of a recent Chinese study in which older adults who engaged in a higher level of overall physical activity, leisure-time exercise, and household activity were less likely to have sleep problems (Li & others, 2018)
- Inclusion of a recent study of older adults that revealed walking a dog regularly was associated with better physical health (Curl, Bibbo, & Johnson, 2017)
- Description of a recent study that found a 10-week exercise program improved the physical (aerobic endurance, agility, and mobility) and cognitive (selective attention and planning) functioning of elderly nursing home residents (Pereira & others, 2017)
- Expanded discussion of falls in elderly adults, including information that falls are the leading cause of fatal injuries among individuals who are 65 years and older (National Center for Health Statistics, 2018)
- Coverage of a recent study in which individuals who had relative to low physical fitness and increased to intermediate or high fitness were at a lower risk for all-cause mortality (Brawner & others, 2017)
- Description of a recent study of frail elderly adults in which a high-intensity walking intervention reduced their frailty, increased their walking speed, and improved their mobility (Danilovich, Conroy, & Hornby, 2018)
- Inclusion of a recent research review that concluded exercise reduces depressive symptoms in older adults (Seo & Chao, 2018)
- Coverage of recent research on older adults that found poorer visual function was associated with cognitive decline (Monge & Madden, 2016; Roberts & Allen, 2016), and with having fewer social contacts and engaging in less challenging social/leisure activities (Cimarolli & others, 2017)
- New coverage of the recent increased interest in using stem-cell-based therapy to treat macular degeneration (Bakondi & others, 2017)
- New discussion of a recent Japanese study of older adults (mean age: 76 years) in which undergoing cataract surgery reduced the risk of developing mild cognitive impairment (Miyata & others, 2018)
- Coverage of a recent study of 80- to 106-year-olds that found a substantial increase in hearing loss in the ninth and tenth decades of life (Wattamwar & others, 2017). In this study, although hearing loss was universal in the 80- to 106-year-olds, only 59 percent wore hearing aids.
- In a recent study, older adults with a hearing problem who used a hearing aid were less likely to be lonely than their counterparts with a hearing problem who did not use a hearing aid (Weinstein, Sirow, & Moser, 2016)
- New discussion of a recent study of 65- to 85-year-olds that found dual sensory loss in vision and hearing was linked to reduced social participation and less social support, as well as increased loneliness (Mick & others, 2018)
- Coverage of a recent study of elderly adults in which those who had a dual sensory impairment involving vision and hearing had functional limitations, experienced cognitive decline, were lonely, and had communication problems (Davidson & Guthrie, 2018)
- Discussion of another recent study in which older adults with a dual sensory impairment involving vision and hearing had more depressive symptoms (Han & others, 2018)
- Coverage of a recent research review that concluded older adults have a lower pain sensitivity but only for lower pain intensities (Lautenbacher & others, 2017)
- Inclusion of a recent study in which a Mediterranean diet lowered the risk of cardiovascular problems in adults age 65 and older (Nowson & others, 2018)
- Update on the leading causes of death in older adults, with recent data indicating that beginning in the 65- to 74-year-old age range, cancer has replaced cardiovascular disease as the leading cause of death in the United States (Centers for Disease Control and Prevention, 2018)
- Inclusion of a recent study that revealed moderate drinkers were more likely to be alive and not have a cognitive impairment at 85 years of age (Richards & others, 2018)
- Inclusion of recent research on older adults in which resistance training improved their physical functioning, psychological well-being, and quality of life (Pedersen & others, 2017)
- Update on the percentage of older adults who are overweight or obese (Flegal & others, 2016)
- Coverage of four recent studies that found overweight and obese older adults are less healthy and experience an earlier death than their normal-weight counterparts (Batsis & others, 2018; Bowman & others, 2017; Khan & others, 2018; Stenholm & others, 2017)

Chapter 18: Cognitive Development in Late Adulthood

- Updated chapter opening story on Helen Small's remarkable life and longevity
- Inclusion of a recent study that found slow processing speed predicted an increase in older adults' falls one year later (Davis & others, 2017)
- Coverage of a recent study in which impaired visual processing speed predicted an increase in vehicle crashes in older adults (Huisingsh & others, 2017)
- New research that indicated cognitive speed of processing training was associated with driving frequency and prolonged driving in older adults across a five-year period (Ross & others, 2016)
- Discussion of a recent experimental study in which high-intensity aerobic training was more effective than moderate-intensity aerobic training or resistance training in improving older adults' processing speed (Coetsee & Terblanche, 2017)

- Coverage of a recent study of older adults that found slower processing speed was associated with unsafe driving (Hotta & others, 2018)
- Inclusion of a recent study of older adults that found playing games involving processing speed for five sessions a week across four weeks improved their processing speed (Nouchi & others, 2017)
- Inclusion of a recent study of older adults in which using compensation strategies was associated with higher levels of independence in everyday living in both cognitively normal and mildly cognitively impaired older adults (Tomaszewski & others, 2018)
- Discussion of a recent study of older adults which revealed that across a 10-year period women who were physically active experienced less decline in executive function than women who were not physically active (Hamer, Muniz Terrera, & Demakakos, 2018)
- Description of a recent experimental study that revealed yoga practice that included postures, breathing, and meditation improved the attention and information processing of older adults (Gothe, Kramer, & McAuley, 2017)
- Coverage of a recent study that found that when older adults regularly engaged in mindfulness meditation, their goal-directed attention improved (Malinowski & others, 2017)
- Inclusion of a recent study indicating that visual distraction especially impaired auditory selective attention in older adults (Van Gerven & Guerreiro, 2016)
- Description of a recent study that found a mindfulness training program improved older adults' explicit memory (Banducci & others, 2017)
- Coverage of a recent study that revealed imagery strategy training improved older adults' working memory (Borella & others, 2017)
- Inclusion of recent research in which aerobic endurance was linked to better working memory in older adults (Zettel-Watson & others, 2017)
- Discussion of recent research with young, middle-aged, and older adults that found all three age groups' working memory improved with training but that older adults improved less than young adults with the training (Rhodes & Katz, 2017)
- New section, "Metacognition," that includes information about strengths and weaknesses in metacognitive skills in older adults compared with those of younger adults (Hargis & others, 2017; McGillivray & Castel, 2017)
- Inclusion of recent research that found young adults made better decisions than older adults in unfamiliar domains, but not in familiar domains (Wayde, Black, & Gilpin, 2017)
- New section, "Mindfulness," reflecting the increased interest in mindfulness training in improving older adults' cognitive functioning (Fountain-Zaragoza & Prakash, 2017)
- Description of a recent study in which self-reflective exploratory processing of difficult life circumstances was linked to a higher level of wisdom (Westrate & Gluck, 2017)
- Discussion of a recent study of cognitive functioning in older adults in ten European countries that found improved memory between 2004 and 2013, with the changes more positive for those who had decreases in cardiovascular diseases and increases in exercise and educational achievement (Hessel & others, 2018)
- New coverage of a recent Australian study that found older adults who had retired from occupations that involved higher complexity maintained their cognitive advantage over their retired counterparts who had worked in less complex occupations (Lane & others, 2017)
- New discussion of a recent study of older adults working in low-complexity jobs that found experiencing novelty in their work (assessed through recurrent work-task changes) was linked to better processing speed and working memory (Oltmanns & others, 2017)
- Inclusion of recent research revealing that older adults with type 2 diabetes had more severe cognitive impairment than their counterparts who did not have the disease (Bai & others, 2017)
- Coverage of a recent study of the oldest-old Chinese that revealed early-stage kidney disease was associated with cognitive decline (Bai & others, 2017)
- Inclusion of a recent study that revealed older adults who continued to work in paid jobs had better physical and cognitive functioning than retirees (Tan & others, 2017)
- New discussion of a study that found those who had retired for health reasons had lower verbal memory and verbal fluency than their counterparts who had retired voluntarily or for family reasons (Denier & others, 2017)
- Coverage of a recent study that found the following were among the most important motives and preconditions to continue working beyond retirement age: financial, health, knowledge, and purpose in life (Sewdas & others, 2017)
- New content on links between nutrition and cognitive aging, including a recent research review that concluded multinutrient approaches using the Mediterranean diet are linked to a lower risk of cognitive impairment (Abbatecola, Russo, & Barbieri, 2018)
- Discussion of a recent study that revealed time to death during terminal decline was a good predictor of cognitive decline over time (Bendayan & others, 2017)
- Description of a recent research review in which engaging in low or moderate exercise was linked to improved cognitive functioning in older adults with chronic diseases (Cai & others, 2017)
- Description of recent research in which participating in physical activity in late adulthood was linked to less cognitive decline (Gow, Pattie, & Geary, 2017)
- Coverage of a recent study that found fish oil supplementation improved the working memory of older adults (Boespflug & others, 2016)
- New description of a study that revealed cognitive training using virtual-reality-based games with stroke patients improved their attention and memory (Gamito & others, 2017)
- Inclusion of a recent study that revealed individuals with Alzheimer disease were less likely to use syntactic components in their language than those who did not have Alzheimer disease (Orimaye & others, 2017)

- Description of a recent study in which the lower working memory capacity of older adults compared with younger adults impaired their comprehension of sentences (Sung & others, 2017)
- New content on Ellen Bialystok and her colleagues' (2016) conclusion that being bilingual may be one of the best ways to delay the onset of Alzheimer disease by as many as four or five years
- Inclusion of recent research in which bilingual Alzheimer patients had better neural network functioning, especially in the neural network involving executive function, than did monolingual Alzheimer patients (Perani & others, 2017)
- Updated statistics on the percentage of U.S. older adults in different age groups in the work force, including 2017 data (Mislinski, 2018)
- Updates on the OECD's surveys on average age of retirement in leading economic countries with France now having the lowest average age and Korea the highest (OECD, 2017)
- Updated data on the average age of retirement that includes 2017 data (Anspach, 2017)
- Inclusion of a recent study that revealed baby boomers expect to work longer than their predecessors from prior generations (Dong & others, 2017)
- Description of a recent research review in which workplace organizational policies, financial security, and poor physical and mental health were antecedents of early retirement (Topa, Depolo, & Alcover, 2018)
- Updated data (2017) on the percentage of American workers who are very confident that they will have a comfortable retirement (Greenwald, Copeland, & VanDerhei, 2017)
- Coverage of a recent research review that concluded in the last two decades depression is not more common in older adults than in younger adults and not more likely to be caused by psychological factors (Haigh & others, 2018). In this review, it also was found that depression in older adults is more likely to be chronic (that is, has a higher rate of relapse) than in younger adults, which is likely linked to higher medical problems in older adults.
- Inclusion of a recent study of community-dwelling older adults in which light physical exercise, taking lessons, using a computer, and participating in community activities predicted a lower level of depressive symptoms (Uemura & others, 2018)
- New discussion of a recent research review that concluded depressed older adults respond to psychological treatments as effectively as their younger adult counterparts do (Haigh & others, 2018). However, also in this review, it was concluded that antidepressants are less effective with older adults than younger adults.
- Researchers have recently found that electroconvulsive treatment (ECT) is more effective than antidepressants in treating older adults' depression (Dols & others, 2017; Rhebergen & others, 2015; Spaans & others, 2015)
- Description of a recent Taiwanese study that found consistent moderate exercise of 15 minutes or more per session three times a week was associated with a lower risk of developing depressive symptoms (Chang & others, 2017)
- Inclusion of recent studies supporting the effectiveness of reminiscence therapy in reducing depressive symptoms in older adults (Wu & others, 2018; Yen & Lin, 2018)
- Coverage of recent national statistics indicating that the suicide rate is highest in the 45-to-64 age group, followed by individuals 85 and over, while the 65–84 age group has a lower rate of suicide than these groups, a rate similar to that of 20- to 34-year-olds (Centers for Disease Control and Prevention, 2015)
- Discussion of a recent study that revealed older adults who had moderate to severe depression were 48 times more likely to engage in suicidal ideation than their counterparts who had minimal to mild depressive symptoms (Rossom & others, 2018)
- Inclusion of recent research on suicide in older adults with content on triggers for suicidal ideation, psychological factors in suicide, and protective factors (Huang & others, 2017)
- Coverage of a recent study in which a decline in socioeconomic status was linked to increased suicide attempts in older adults (Dombrowski & others, 2018)
- Updated data on the percentage of older adults with Alzheimer disease and updates on the significant increase in Alzheimer disease in individuals 85 and older (Alzheimer's Association, 2017)
- New content on women being more likely to have the APOE4 gene than men and commentary about the APOE4 gene being the strongest genetic predictor of late-onset (65 years and older) Alzheimer disease (Dubal & Rogine, 2017)
- New content on APP, PSEN1, and PSEN2 gene mutations being linked to the early onset of Alzheimer disease (Carmona, Hardy, & Guerreiro, 2018)
- New discussion of the epigenetics of Alzheimer disease, including the role of DNA methylation (Kader & others, 2018; Marioni & others, 2018; Zaghlool & others, 2018)
- Update on the five drugs that have been approved by the U.S. Food and Drug Administration to treat Alzheimer disease (Almeida, 2018)
- Inclusion of recent research indicating that older adults who attended religious services regularly lived longer than their counterparts who did not attend these services (Idler & others, 2017)
- Coverage of a recent study in which older adult women had higher levels of spirituality than did older men (Bailly & others, 2018)
- New description of a recent study of older adults in which secure attachment to God was linked to an increase in optimism and self-esteem in the future (Kent, Bradshaw, & Uecker, 2018)
- New discussion of a recent study of older adults in which religious service attendance was associated with higher levels of resilience and lower levels of depression (Manning & Miles, 2018)
- Coverage of a recent study that revealed higher levels of spiritual/religious coping were linked to lower levels of depressive symptoms (Lee & others, 2017)
- Inclusion of a recent study of Latinos that found lack of religiosity was associated with elevated anxiety and depressive symptoms in older adults but not in young and middle-aged adults (Leman & others, 2018)

Chapter 19: Socioemotional Development in Late Adulthood

- Description of a recent study that supports the activity theory of aging by indicating that an activity-based lifestyle was associated with lower levels of depression in older adults (Juang & others, 2018)
- Coverage of a recent study that found an instrumental reminiscence intervention improved the coping skills of older adults (Satorres & others, 2018)
- Inclusion of a recent study of individuals 22 to 94 years old that revealed on days when middle-aged and older adults, as well as individuals who were less healthy, used more selective optimization with compensation strategies, they reported having a higher level of happiness (Teshale & Lachman, 2016)
- Discussion of a recent study in which older adults reacted with less anger about a personal memory than younger adults did (Kunzmann & others, 2017)
- Inclusion of a recent meta-analysis that concluded emotional experiences in older adults are more positive than for younger adults (Laureiro-Martinez, Trujillo, & Unda, 2017). Also, in this review, it was concluded that older adults focus less on negative events in the past than younger adults do.
- New commentary by Laura Carstensen (2016) noting that when older adults focus on emotionally meaningful goals they are more satisfied with their lives, feel better, and experience fewer negative emotions
- New recommendations on ways that older adults can become more socially engaged (Sightlines Project, 2016)
- Coverage of a recent study in which emotionally unstable adults' self-esteem declined the most in the second half of life (von Soest & others, 2018). In this study, not having a cohabiting partner, being unemployed, and having a disability were associated with having a lower level of self-esteem and a steeper decline in self-esteem over a five-year period.
- New description of a study that found older adults with a higher level of conscientiousness experienced less cognitive decline as they aged (Luchetti & others, 2016)
- New discussion of a study of older adults in which higher levels of neuroticism predicted higher frailty and lower levels of openness to experience and agreeableness predicted lower frailty (Stephan & others, 2017)
- Coverage of a study indicating that in older adults, a higher level of agreeableness was linked to a lower risk of developing dementia while a higher level of neuroticism was associated with a higher risk of developing dementia (Terracciano & others, 2017)
- Discussion or research revealing that older adults with higher levels of openness and lower levels of agreeableness engaged in more frequent sexual activity and had lower levels of sexual dysfunction (Allen & Desille, 2017). Also in this study, higher levels of conscientiousness were related to more conservative attitudes about sex and lower levels of sexual dysfunction.
- Inclusion of recent research indicating that higher levels of conscientiousness, openness to experience, agreeableness, and extraversion were linked to positive emotions in older adults, while neuroticism was associated with negative emotions (Kalbaugh & Huffman, 2017)
- New content indicating that individuals who are extraverted and low in neuroticism are likely to live longer (Graham & others, 2017)
- Discussion of a recent study of 15- to 105-year-old individuals in 29 European countries that revealed younger individuals engaged in age discrimination more than did older individuals (Bratt & others, 2018)
- Updated research indicating that low-SES older adults are at greater risk for an earlier death than higher-SES older adults (Domenech-Abella & others, 2018)
- Updated data on significant increases in use of the Internet, smartphones, and social networking by U.S. older adults (Anderson, 2017)
- Updated data on the percentage of older adults who are married and who are widowed (U.S. Census Bureau, 2017)
Coverage of a recent study that found, among older men, those who were married were more likely to endorse stereotypically masculine traits but also to have higher androgyny scores than unmarried older men (Lemaster, Delany, & Strough, 2017)
- Description of a recent study that explored centenarians' marital history and living arrangements with outcomes that were quite different for men and women (Poulain & Herm, 2016)
- Inclusion of a recent study indicating lower rates of divorce among older adults who had been married for a longer time, had better marital quality, owned a home, and were wealthier (Lin & others, 2018)
- Discussion of a recent study in which partnered older adults were more likely to receive Social Security and enjoy relative higher Social Security benefits, and less likely to live in poverty (Lin, Brown, & Hammersmith, 2017)
- Updated data on the dramatic increase in older adults who are now cohabiting (Stepler, 2017)
- New discussion of recent research on the health and well-being of older LGBT individuals with a focus on comparisons of those who are married, unmarried and partnered, and single (Goldsen & others, 2017)
- Updated data on the percentage of men and women 65 years and older who are divorced, which increased dramatically from 1980 to 2015 (U.S. Census Bureau, 2016b)
- Coverage of a recent national study of older adults in which men who are in cohabiting relationships have psychological well-being that is similar to married men and better than daters and the unpartnered (Wright & Brown, 2017). In contrast, there were few differences in psychological well-being of women based on their partnership status.
- New discussion of research indicating that middle-aged adults feel more positive about providing support for their children than for their aging parents (Birditt & others, 2018)
- Inclusion of recent research that found older adults who volunteered regularly had a lower risk of cognitive impairment (Infurna, Okun, & Grimm, 2016)
- Description of a recent study that revealed older adults reported fewer problems with friends, fewer negative friendship qualities, less frequent contact with friends, and more positive friendship qualities with a specific friend than younger adults did (Schlosnagle & Strough, 2017)

- Inclusion of a recent study in which 18 percent of older adults stated that they were often or frequently lonely (Due, Sandholt, & Waldorff, 2018)
- Expanded discussion of socioemotional selectivity theory to include the role of a decreasing amount of time to live as an explanation for prioritizing meaningful relationships in late adulthood (Moss & Wilson, 2017; Segerstrom & others, 2016)
- Description of a recent Hong Kong study in which older adults 75 and older who used smartphones and the Internet to connect with family, friends, and neighbors had a higher level of psychological well-being than those who did not (Fang & others, 2018)
- Coverage of a recent 2016 Nielsen survey that found older adults watch a staggering amount of television—51 hours, 32 minutes per week—far more than any other age group (Recode, 2016)
- Description of a longitudinal study of individuals from 13 to 72 years of age in which attachment anxiety declined in middle-aged and older adults (Chopik, Edelstein, & Grimm, 2018). Also in this study, attachment avoidance decreased in a linear fashion across the life span. Being in a relationship was linked with lower rates of attachment anxiety and attachment avoidance, and men were higher in attachment avoidance throughout the life span.
- Updated data on the percentage of older adults who engage in volunteering (U.S. Bureau of Labor Statistics, 2016)
- Inclusion of recent research on links between volunteering by older adults and improved health (Burr & others, 2018; Carr, Kail, & Rowe, 2018), better cognitive functioning (Proulx, Curl, & Ermer, 2018), and less loneliness (Carr & others, 2018)
- Expanded and updated discussion of why volunteering has positive outcomes for older adults (Carr, 2018)
- Updated data on the increasing number of older adults living in poverty (U.S. Census Bureau, 2016a)
- Inclusion of recent research indicating that the life satisfaction of Latino older adults was higher than for African American and non-Latino older adults (Zhang, Braun, & Wu, 2017)
- Coverage of recent research in which older adult immigrants had higher levels of life satisfaction than native-born older adult U.S. residents (Calvo, Carr, & Matz-Costa, 2017). In this study, Latino immigrants had the highest life satisfaction of all groups studied. These findings have been labeled the “happiness paradox.”
- Description of a recent study in which four factors emerged as best characterizing successful aging: proactive engagement, wellness resources, positive spirit, and valued relationships (Lee, Kahana, & Kahana, 2017)

Chapter 20: Death, Dying, and Grieving

- Inclusion of a recent study in which completion of advance directives was associated with a lower probability of receiving life-sustaining treatment (Yen & others, 2018)
- Updated information on countries that allow euthanasia (Belgium, Columbia, Luxembourg, and the Netherlands) and assisted suicide (Belgium, Canada, Finland, Luxembourg, the Netherlands, and Switzerland)
- Update on the increasing number of states that allow assisted suicide—California, Colorado, Montana, Oregon, Vermont, and Washington, as well as Washington, DC
- New definition of assisted suicide as a key term and clearer distinctions made between euthanasia, in which the patient self-administers the lethal medication and is allowed to decide when and where to do this, and euthanasia, in which the physician or a third party administers the lethal medication
- Inclusion of a recent Gallup poll in which 69 percent of U.S. adults said that euthanasia should be legal, 51 percent said that they would consider ending their own lives if faced with a terminal illness, and 50 percent reported that physician-assisted suicide is morally acceptable (Swift, 2016)
- New content on recent criticisms of the “good death” concept that suggest moving away from focusing on a single event to improving people’s last years and decades of life (Pollock & Seymour, 2018; Smith & Periyakoli, 2018)
- Significantly revised content in the section on children’s conceptions of death to include recent research indicating that young children have a better understanding of death than was previously thought as well as developmental changes that occur (Panagiotaki & others, 2018; Rosengren, Gutierrez, & Schein, 2014a, b)
- Discussion of recent research indicating that children know more about death than their parents think they do and that there is considerable variability in their conceptions of death (Panagiotaki & others, 2018)
- Coverage of a recent research review that concluded relatively brief interventions with bereaved children after the death of a parent can prevent children from developing severe problems such as traumatic grief and mental disorders (Bergman, Axberg, & Hanson, 2017)
- Description of recent experimental studies that found the Family Bereavement Program, a 12-session program designed to promote effective parenting and teach coping skills following the death of a parent or caregiver, was effective in preventing children and adolescents from developing severe problems such as traumatic grief and mental disorders; reducing the risk of depression, prolonged grief disorder, and alcohol problems; and improving their coping skills up to 6 years after the program ended (Sandler & others, 2016, 2017)
- New research on the percentage of adult bereavement cases that involve prolonged grief disorder and ages at which this disorder is more likely to occur (Lundorff & others, 2017)
- Inclusion of a 7-year longitudinal study of older adults in which those experiencing prolonged grief had greater cognitive decline than those with normal grief (Perez & others, 2018)
- Discussion of a recent study that found individuals with complicated grief had higher levels of neuroticism (Goetter & others, 2018)
- Coverage of a study that found cognitive behavior therapy reduced prolonged grief symptoms (Bartl & others, 2018)
- Updated content about a recent extension of the dual-process model of bereavement, which mainly focused on an individual’s bereavement, toward an integrative intrapersonal/interpersonal model that includes bereaved immediate family members and relatives who also have experienced the loss (Stroebe & others, 2017a, b; Stroebe & Schut, 2015, 2017)

- Updated statistics on the percentage of widows in the United States (Administration on Aging, 2015)
- Description of a recent cross-cultural study indicating that depression peaked in the first year of widowhood for both men and women but continued to be present in widowed men for 6 to 10 years post bereavement (Jadhav & Weir, 2018)
- Inclusion of a recent study in which volunteering reduced widowed older adults' loneliness (Carr & others, 2018)
- Updated data on the ongoing trend toward cremation, with 50.1 percent of deaths followed by cremation in the United States in 2016 and a projected increase to 56.3 percent in 2020 (Cremation Association of North America, 2017). In Canada, in 2016 cremation occurred following 70.2 percent of deaths. with a projected increase to 79.8 percent in 2020.