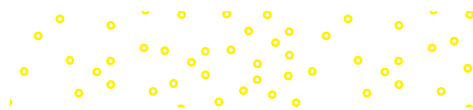


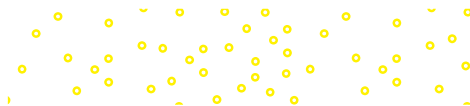
LIFE-SPAN DEVELOPMENT

Nineteenth Edition

JOHN W. SANTROCK

University of Texas at Dallas





LIFE-SPAN DEVELOPMENT, NINETEENTH EDITION

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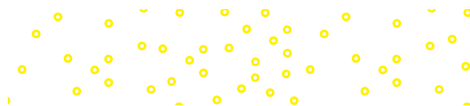
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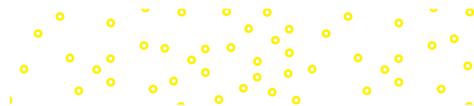
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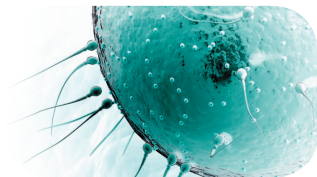
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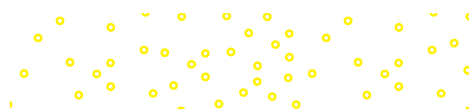
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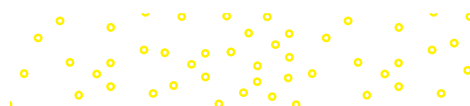
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guide to diversity, equity, and inclusion

Special attention is given to diversity, equity, and inclusion (DEI) in this new edition in order to understand their influence on many aspects of our physical, cognitive, and social development. Preferred pronouns and terminology used to refer to different racial and ethnic groups have been updated, and a new discussion has been added to explain why certain terms are used throughout the text. Studies conducted by researchers representing diverse and global populations and topics are included throughout to ensure a balanced view of human development.

Additionally, all of the *Connecting with Careers* profiles have been updated, and many new profiles introduce the reader to a diverse group of active professionals.

Following is a chapter-by-chapter list of examples of current content and revisions involving DEI issues and research.

Chapter 1: Introduction

- Coverage of recent projections for a decline of approximately one year in U.S. life expectancy in 2020, with a three- to four-year drop for Black Americans and Latinos due to the staggering number of deaths related to the COVID-19 pandemic (Andrasfay & Goldman, 2021)
- Updated data on the increasing percentage of ethnic minority children in the United States, which reached 52.3 percent in 2020 (U.S. Census Bureau, 2020)
- Updated poverty rates indicating a considerable drop from 2018 to 2019 for Black American, Latino, and Asian American children and adolescents—a much larger drop than for non-Latino White children and adolescents (Semega & others, 2020)
- Description of socioeconomic status (SES) and its inequalities (van Zweiten & others, 2021)
- Inclusion of a recent research review of 3- to 19-year-old U.S. children and adolescents indicating that those living in lower socioeconomic settings were more likely to have higher levels of psychopathology (Peverill & others, 2021)
- Description of a recent focus of the Ascend two-generation program on the importance of parents' education, economic stability, and overall health for their children's well-being (Ascend, 2021; Aspen Institute, 2019)
- Section on "Sociocultural Contexts and Diversity" including discussions of culture, cross-cultural studies, and ethnicity
- New *Connecting Development to Life* feature highlighting ongoing discussions regarding preferred terminology for describing ethnic and racial groups and how this terminology will be addressed throughout this edition
- *Connecting with Careers* profile that features Gustavo Medrano, a clinical psychologist who specializes in bicultural and bilingual therapy for children, adolescents, and adults
- Content on discrimination and prejudice experienced by ethnic minority individuals (Clauss-Ehlers, Roysircar, & Hunter, 2021), including commentary about the killing of George Floyd and others by police
- Recent research by Adriana Umaña-Taylor and her colleagues (Umana-Taylor & Drake, 2022; Umaña-Taylor & Hill, 2020) indicating that pride in one's ethnic identity group and exploration of ethnic identity development have positive outcomes
- Revised definition of gender, which is now described as a mosaic of categories related to femininity and masculinity based on social and cultural norms
- Coverage of gender classification (Erickson-Schroth & Davis, 2021) and transgender (Spizzirri & others, 2021)
- Updated U.S. poverty rates indicating that in 2019, 14.1 percent of U.S. children under 18 years of age were living in families with incomes below the poverty line (U.S. Census Bureau, 2020)
- Updated statistics on ethnic minority poverty rates in the United States (U.S. Census Bureau, 2020)
- Discussion of social policy (Crear-Perry & others, 2021), including American activist Marian Wright Edelman's efforts to improve children's rights and quality of life
- Description of a recent research review of a psychological perspective on intergenerational economic mobility, in which it was concluded that the mastery of three developmental tasks for each generation—academic/language skills, self-regulation/mental health, and parent-child relationships—will produce better educational outcomes for parents and children (Sabol & others, 2021)
- New content indicating that a further contribution of Bronfenbrenner's theory is an emphasis on a range of social contexts beyond the family, such as neighborhood, religion, school, workplace, and culture as influential in children's development (Igbal & others, 2021)
- Recent analysis using a number of environmental systems in Bronfenbrenner's theory to better understand Black American/non-Latino White disparities in maternal and child health (Noursi, Saluja, & Richey, 2021)
- Main section on reducing gender bias (Erickson-Schroth & Davis, 2021) and cultural and ethnic bias (Gonzalez, Carvacho, & Jimenez-Moya, 2022) in research on life-span development

- *Connecting with Careers* profile that features Pamela Trotman Reid, a successful college administrator who has had a special interest in improving the lives of Black American girls
- Content on the concept of ethnic gloss, which involves using an ethnic label such as Black American or Latino in a superficial way that portrays an ethnic group as being more homogeneous than it really is (Trimble, 2021)
- Discussion of how more attention needs to be given to biculturalism because an increasing percentage of children and adults of color identify with two or more ethnic groups (Clauss-Ehlers, Roysircar, & Hunter, 2021)

Chapter 2: Biological Beginnings

- New content on the number of children born worldwide with sickle-cell anemia and how stem cell transplantation is being explored as a treatment for infants with sickle-cell anemia (Ashorobi & Bhatt, 2022)
- New data indicating that about 1 in 500 Black American babies and 1 in 36,000 Latino babies is affected by sickle-cell anemia (Borhade & Kondamudi, 2021). One in 10 Black Americans is a carrier, as is 1 in 20 Latinos.
- New research indicating that children adopted internationally have often undergone adverse experiences prior to adoption, placing them at increased risk for problematic socioemotional development (Yarger & others, 2021)
- Description of a United Kingdom study of mainly non-Latino White, well-educated gay father, lesbian mother, and heterosexual families and their adopted young adolescents that found no differences in parent-adolescent relationships and adolescent behavior between the different types of families (McConnachie & others, 2021)
- New *Connecting Through Research* feature, “Outcomes of Children Who Are Adopted in Gay, Lesbian, and Heterosexual Families,” describing research that found no differences in child and family functioning in these different family structures but rather some process differences in parenting stress and early child adjustment (Farr, 2017)

Chapter 3: Prenatal Development and Birth

- Description of a recent study of low-income primarily Latina mothers which found that maternal depression during pregnancy was linked to children’s lower cognitive development, especially among girls, at 5 years of age (Urizar & Munoz, 2021)
- New data on the lower percentage of Black American mothers (68 percent) receiving prenatal care compared with non-Latina White mothers (83 percent) (Centers for Disease Control and Prevention, 2021)
- Coverage of a recent study in which Black American and Latina women reported almost twice as many barriers to prenatal care as non-Latina White women did (Fryer & others, 2021)
- New data indicating that from 2019 to 2020, home births for non-Latina White women increased from 1.55 to 1.87 percent

while during this time frame they increased from 0.50 to 0.68 percent for Black American women and from 0.37 percent to 0.48 percent for Latina women

- Updated data on the preterm birth rate, which in 2020 was 14.3 percent for Black American infants (down from 16.7 percent in 2011) and 9.8 percent for Latino infants, down from 11.6 percent in 2011
- Updated statistics indicating that the rate of low birth weight in the United States, which was 8.3 percent in 2019, is considerably higher than that of many other developed countries (Martin, Hamilton, & Osterman, 2021)
- Discussion of a recent study that identified poverty factors as a likely reason for disparities between Black Americans and non-Latino Whites in low birth weight outcomes (Loggins, Clay, Woodson, & Kersh, 2021)
- New coverage of a recent Japanese study of very low birth weight infants (VLBW) that found 6.2 percent were born with birth defects, with the most common being chromosomal abnormalities, heart defects, and malformation of the digestive system (Kawasaki & others, 2021)
- Cross-cultural content on the people (midwives, for example) who aid mothers in the birth of their babies (McKellar & others, 2021)
- New *Connecting with Careers* profile featuring midwife Jennifer Nguyen, who works with diverse communities in Canada and strives to reduce inequities in health care in rural and remote areas

Chapter 4: Physical Development in Infancy

- Research indicating why Black American mothers tend to have lower rates of breast feeding (Jones & others, 2015)
- Discussion of recent research indicating that high-risk infants in a WIC program had higher cognitive scores on the Bayley Scales of Infant Development (Lakshmanan & others, 2020)
- Recent study that discovered longer participation in a WIC Special Supplemental Nutrition Program improved children’s healthy eating (Borger & others, 2022)
- Coverage of a recent analysis that indicated Black immigrant first-time mothers had a significantly higher breast feeding initiation rate for those enrolled in the WIC Special Supplemental Nutrition Program than did their Black American counterparts (Roess & others, 2022)
- New content indicating that the emergence of COVID-19 in the United States led most states to close or extensively limit their early child-care and education programs (Bauer & others, 2021), affecting many of the 4.6 million low-income young children who are provided free meals and snacks each day

Chapter 5: Cognitive Development in Infancy

- Discussion of recent research indicating that joint attention is more likely to effectively occur in high-SES than low-SES families, possibly because infants encounter more cognitive stimulation, more books, less household chaos, and less stress in higher-SES families (Reilly & others, 2021)

- Content on how if you learn another language, English syntax will not get you very far. For example, in English an adjective usually precedes a noun, whereas in Spanish the adjective usually follows the noun.
- Coverage of cross-linguistic differences in the process of vocabulary acquisition (Chen & others, 2021), with children learning Mandarin Chinese, Korean, and Japanese acquiring more verbs earlier in their development than children who are learning English. This cross-linguistic difference reflects the greater use of verbs in the language input to children in these Asian languages.
- Inclusion of examples of two-word utterances from 18- to 24-month-olds whose first language is English, German, Russian, Finnish, Turkish, or Samoan
- Description of a recent study in which children living in extreme poverty had much lower levels of vocabulary and reading comprehension (Lervag & others, 2019)
- Coverage of research indicating that compared with parents who were professionals, parents receiving public assistance talked much less to their young children, talked less about past events, and provided less elaboration (includes Figure 15) (Hart & Risley, 1995)
- New *Connecting Through Research* feature indicating the effectiveness of early parental communication quality for the language and literacy success of children from Mexican-American families in low-income environments, and that culturally specific dimensions of early parent-child engagement can align with general positive features of joint engagement (Adamson & others, 2021)
- Discussion of recent research that revealed child-directed speech in a one-to-one social context at 11 to 14 months of age was related to productive vocabulary at 2 years of age for Spanish-English bilingual infants across languages and in each individual language (Ramirez-Esparza, Garcia-Sierra, & Kuhl, 2017)
- Inclusion of studies in several North American urban areas and a small society on the island of Tanna in the South Pacific Ocean that found that fathers in both types of contexts engaged in child-directed speech with their infants (Broesch & Bryant, 2018)
- Coverage of recent research that revealed introducing a mobile app emphasizing shared reading as opposed to screen time to primarily Latino and low-income parents of 6- and 18-month-olds during well-visits resulted in more frequent shared book reading at 12 months and higher language development scores at 24 months (Hutton & others, 2021)

Chapter 6: Socioemotional Development in Infancy

- New content noting that as greater numbers of parents began working at home to maintain social distancing during the COVID-19 pandemic, fathers likely were spending more time interacting with their children than in previous years
- Discussion of a recent study of low-income families in which infants who had a difficult temperament at 0 to 12 months were more likely to show behavior problems at 36 months (Maltby & others, 2019)

- Section on gender, culture, and temperament
- Coverage of research showing that Chinese children tend to be more inhibited than U.S. and Canadian children (Chen, Fu, & Zhao, 2015)
- Description of a recent study that indicated Latino infants were at higher risk for obesity if they showed avoidant or anxious insecure attachment behavior than if they showed secure attachment (Hepworth & others, 2021)
- Inclusion of content about the Aka pygmy culture in which fathers spend as much time caring for their infants as mothers do (Hewlett & MacFarlan, 2010)
- Inclusion of data collected in April and May 2021 through the U.S. Census Bureau's Household Pulse Survey in which approximately 6.5 million families with children reported experiencing child care disruptions in the four weeks preceding the survey because of the COVID-19 pandemic (U.S. Census Bureau, 2021). Black and Latino families were the most likely to report that an adult in the household had to take unpaid leave (29.4 percent and 32.9 percent, respectively), while non-Latino White and Asian American families were most likely to report supervising children while working (33.3 percent and 34.7 percent, respectively). And when non-Latino White and Asian American families did take leave to care for their children, they were more likely to be paid during their time off.
- Discussion of cross-cultural comparisons of child care noting that many European countries, especially those in Scandinavia, have led the way in providing government-funded child care

Chapter 7: Physical and Cognitive Development in Early Childhood

- Discussion of the Reggio Emilia approach, an educational program for young children that was developed in the northern Italian city of Reggio Emilia, in which children of single parents and children with disabilities have priority in admission and other children are admitted according to a scale of needs (Harris, 2021)
- Coverage of a recent study of almost 4,000 children that found low family income was linked to children's lower brain volume and cortical thickness (Tomasi & Volkow, 2021)
- Inclusion of a recent study of Latina mothers with low incomes and their children that revealed the children had a higher future obesity risk when their mothers ignored the children's fullness cues and pressured them to eat (Power, & others, 2021)
- New content indicating that the emergence of COVID-19 in the United States led most states to close or extensively limit their child-care and early childhood education programs (Bauer & others, 2021), affecting many of the 4.6 million low-income young children who depend on these programs for free meals and snacks each day
- Section on "Malnutrition in Young Children in Low-Income Families" which describes malnutrition as a problem for many U.S. children, with approximately 11 million preschool children experiencing malnutrition that places their health at risk and poverty being an especially strong risk factor for malnutrition in young children (Schiff, 2022)

- Section on “The State of Illness and Health of the World’s Children” that discusses the devastating effects on the health of young children that occur in countries where poverty rates are high (UNICEF, 2022)
- New research indicating that the poor are the majority in nearly one out of every five nations in the world, often experiencing hunger, malnutrition, illness, inadequate access to health care, unsafe water, and a lack of protection from harm (Coker & others, 2021)
- Inclusion of *Connecting Development to Life* feature on Tools of the Mind, a successful early childhood education curriculum that emphasizes children’s development of self-regulation and the cognitive foundations of literacy (Tools of the Mind, 2021). Most of the children in the Tools of the Mind programs are at risk because of their living circumstances, which in many instances involve poverty and other difficult conditions such as being homeless and having parents with drug problems.
- New *Connecting Through Research* feature on how low-income preschool-aged children’s ability to selectively focus and sustain their attention served as a strong predictor of early math reasoning and early literacy skills in both fall and spring assessments (Shannon, Scerif, & Raver, 2021)
- Discussion of a recent cross-cultural study in which executive function levels of children in Hong Kong and mainland China were higher than those of children in Great Britain (Xu & others, 2020)
- Coverage of an experimental study with young children living in high-poverty urban areas that revealed over a 3-year period, children who were randomly assigned to Montessori programs fared better on academic achievement, social understanding, and mastery orientation than those who attended other schools (Lillard & others, 2017)
- Inclusion of section on “Education for Children Who Are Disadvantaged”
- Updated data indicating that for a number of years, Head Start served approximately 1 million children 5 years of age and younger per year, although that number dropped to 755,000 in 2021 because of the COVID-19 pandemic (KIDS COUNT, 2022)
- New *Connecting with Careers* feature on Rakaya Humphreys, Director of Head Start for the Northwest Tennessee Economic Development Council, who also benefitted from Head Start services as a young mother

Chapter 8: Socioemotional Development in Early Childhood

- Updated definitions of gender, gender roles, and gender-typing
- New *Connecting Through Research* describing recent research that supports the effectiveness of an emotion-coaching program in a non-Western culture (China) (Qiu & Shunn, 2022)
- Inclusion of content on children’s interaction in same-sex groups indicating that boys are more likely than girls to engage in rough-and-tumble play, competition, conflict, ego displays, risk taking, and quests for dominance, whereas girls are more likely to engage in “collaborative discourse,” in which they talk and act in a more reciprocal manner
- Coverage of a recent study of 3- to 4- and 6- to 7-year-olds in which boys were more likely than girls to engage in gender stereotyping, especially with masculine stimuli such as toys, and to be sanctioned for not conforming to gender stereotypes (Skocajic & others, 2020)
- Content on how researchers have found that in some ethnic groups, aspects of the authoritarian style used by many Asian American parents may be associated with more positive child outcomes than Baumrind predicts (Chao, 2007)
- Discussion suggesting that the emphasis on respect and obedience in Latino child rearing is likely to encourage the development of a self and an identity that are embedded in the family
- Inclusion of a cross-cultural comparison indicating that individuals in the United States were among those with the most favorable attitudes toward corporal punishment and were the most likely to remember it being used by their parents (Curran & others, 2001)
- Updated data on physical punishment being outlawed in 59 countries in 2020 (up from 34 in 2012), with a number of countries increasing the ban on physical punishment mainly to promote children’s rights to protection from abuse and exploitation (Global Initiative to End All Corporal Punishment of Children, 2020)
- New *Connecting with Careers* profile of Allison Tomlinson, a college professor and marriage and family therapist who specializes in providing trauma therapy intervention to children in non-traditional family structures such as foster care and adoption
- Inclusion of a recent Pew Research Center study (2019) of 130 countries and territories indicating that U.S. children are the most likely to live in single-parent households.
- Coverage of the influence of socioeconomic status on the effects of divorce on children (Braver & Lamb, 2013)
- Main section on “LGBTQ Families”
- Updated and expanded data indicating that in 2019, 16.1 percent of same-gender couples had children in their household, with 24 percent of these being female-female couples and 7.2 percent male-male couples (Statista, 2021)
- Content on how both self-reports and observations have found that lesbian and gay couples shared child care more than heterosexual couples did, with lesbian couples being more supportive than gay couples (Patterson, 2019)
- Main section on cultural, ethnic, and sociocultural influences on parenting
- Updated data indicating that in 2020, 50 percent of children 18 years of age and younger were non-Latino White and that by 2050, this figure is projected to decrease to 39 percent, with 31 percent Latino, being 14 percent Black American, and 7 percent Asian American (Childstats.gov, 2021)
- Discussion of the fact that for too long, the prevailing perspective on ethnic differences was deficit-based and assumed that children in ethnic minority groups were inherently challenged and overwhelmed by stressors (Weissmark, 2020)
- Coverage of the major change in families in the last several decades involving the dramatic increase in the number of Latino and Asian families immigrating into the United States (Valdez & others, 2021)
- Description of the increasing number of children growing up in transnational families that move back and forth between the

United States and other countries and regions such as Mexico, Latin America, and China (Penas & others, 2020)

- Content on low-income families having less access to resources than higher-income families do (Duarte & others, 2022), including reduced access to optimal nutrition, health care, protection from danger, and enriching educational and socialization opportunities such as tutoring and lessons in various activities (Dennis, Mazda, & Volkow, 2022)
- Description of a recent review of research involving 3- to 19-year-old U.S. children and adolescents that concluded those growing up in lower socioeconomic settings are more likely to have higher levels of psychopathology (Peverill & others, 2021)
- New content on how some children with low-SES backgrounds are competent and perform well in school, with some performing better than many middle-SES and higher-SES students

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

- New section on “Health Disparities in Children Living in Poverty and Children of Color” (Dembo & others, 2022)
- Inclusion of recent data on the higher incidence of health problems in underrepresented ethnic groups (Tsenoli & others, 2022)
- Description of recent data on childhood obesity indicating that in 2017 to 2020, 26.2 percent of Latino children, 24.8 percent of Black children, 12.1 percent of non-Latino White children, and 9 percent of Asian American children were obese (Stierman & others, 2021)
- Coverage of how the COVID-19 pandemic has disproportionately affected children living in poverty conditions and children of color, as well as children who are vulnerable due to their living situations or underlying health conditions (Ang & others, 2022)
- Discussion of a recent intervention with 2- to 19-year-olds in the Supplemental Nutrition Assistance Program (a program for children who are at higher risk of poor diet) that revealed restricting purchases of sugar-sweetened beverages promoted a healthier diet and reduced their obesity risk (Choi, Wright, & Bleich, 2021)
- Updated data on the percentage of students with various learning disabilities who participated in special education in 2019–2020 (National Center for Health Statistics, 2021)
- Inclusion of a recent research review indicating that ADHD in many adolescents persisted into adulthood (mean rate of 43 percent) and was often associated with substance misuse and antisocial behavior (Di Lorenzo & others, 2021)
- Description of a recent survey that indicated the estimated proportion of 8-year-old children with autism spectrum disorders had increased to 1 in 54 (Centers for Disease Control and Prevention, 2020)
- Discussion of a recent survey in which autism spectrum disorders were identified three times more often in boys than in girls (Centers for Disease Control and Prevention, 2021)
- Section on education issues affecting children who have disabilities
- Inclusion of recent research by Ann Masten and her colleagues (Masten, 2021; Masten & others, 2021) indicating that

executive function and parenting skills are linked to homeless children’s success in school

- Discussion of the Flynn effect—a worldwide increase in intelligence test scores that has occurred over a short time frame (Flynn & Sternberg, 2020)
- Content on researchers being increasingly concerned about finding ways to improve the early environment of children who are at risk for impoverished intelligence and poor developmental outcomes (Schariti, Simeonsson, & Hall, 2021)
- Section on cross-cultural comparisons of intelligence and the difficulty of creating culture-fair tests
- Description of ethnic variations in intelligence and how as Black Americans have gained social, economic, and educational opportunities, the gap between Black Americans and non-Latino Whites on standardized intelligence tests is shrinking
- Coverage of the potential influence on intelligence test performance of stereotype threat, the anxiety that one’s behavior might confirm a negative stereotype about one’s group (Konopka & others, 2021)
- Discussion of Black American, Latino, and Native American children being underrepresented in gifted programs (Ford, 2016)
- Section on “Second Language Learning and Bilingual Education”
- Inclusion of research indicating that children who are fluent in two or more languages have better cognitive processing skills than children who are fluent in only one language
- Coverage of a recent analysis across a number of countries in which bilingual children consistently demonstrated better executive function (Schirmbeck, Rao, & Maehler, 2020)
- Inclusion of a recent study conducted by Virginia Marchman and her colleagues (2020) that found families who primarily speak Spanish should engage in activities that develop children’s competence in Spanish while also encouraging opportunities to learn English
- *Connecting with Careers* profile on Salvador Tamayo, a middle school broadcasting teacher in West Chicago, Illinois, who mentors a student club focused on empowering Latino youth to lead and strengthen their communities through college and career readiness

Chapter 10: Socioemotional Development in Middle and Late Childhood

- Coverage of a longitudinal study that found a reciprocal relationship between self-esteem and achievement in Mexican-origin youth (Zheng & others, 2020)
- Discussion of Carol Gilligan’s care perspective, which describes gender differences in moral development
- Section on culture and moral reasoning indicating that Kohlberg’s theory is not always supported in other cultures
- Major section on gender with subsections on gender stereotypes, gender similarities and differences, and gender in context
- New content on how the brains of boys/men have more intrahemisphere connectivity, while the brains of girls/women have more interhemisphere connectivity (Grabowska, 2020)
- Update on how as students move from fourth to twelfth grade, the gender differences favoring girls in reading and writing increase considerably (Reilly, Neumann, & Andrews, 2019)

- Inclusion of content on relational aggression and discussion of research indicating that adolescent girls engage in this type of aggression more than boys do (Smith, Rose, & Schwartz-Mette, 2010)
- Discussion of a recent study that found girls expressed more emotional concern for others than boys did (Trentini & others, 2021)
- Description of a recent study that revealed girls had much better self-regulation than boys did (van Tetering & others, 2020)
- Inclusion of content on how girls and women in many countries continue to have limited access to education and other opportunities
- Coverage of a recent study of more than 30,000 U.S. high school students that found sexual minority youth were more likely to report both school bullying and cyberbullying victimization than their heterosexual peers, while Black American and Latino adolescents were less likely to report both types of victimization (Webb & others, 2021). And non-Latino White gay/lesbian or bisexual youth reported more bullying victimization than non-Latino White heterosexual youth did.
- Coverage of a recent analysis in which 14,000 students were assessed in the spring of 2020 to evaluate their mental health and learning following the emergence of the COVID-19 pandemic (Authentic Connections, 2021). Students of color were found to be at greater risk for mental health and learning difficulties than non-Latino White students.
- Updated data on international comparisons of students' achievement indicating that U.S. students placed 15th out of 56 countries in fourth-grade math and eighth in fourth-grade science out of 55 countries (TIMSS, 2019)
- *Connecting Through Research* feature titled "Parenting and Children's Achievement: My Child Is My Report Card, Tiger Mothers, and Tiger Babies Strike Back" that describes Asian and Asian American parenting styles

Chapter 11: Physical and Cognitive Development in Adolescence

- Inclusion of a recent research review that indicated higher childhood SES is associated with more efficient brain networks in adulthood (Tooley, Bassett, & Mackey, 2021)
- Updated data indicating that among U.S. ninth- to twelfth-graders in 2019, 42.3 percent of Black Americans, 42.3 percent of Latinos, 38 percent of non-Latino Whites, and 15.6 percent of Asian Americans said they had experienced sexual intercourse (Underwood & others, 2020)
- New *Connecting with Careers* feature on Terrance Weeden, a pediatrician who is also a vocal advocate for LGBTQ youth
- Coverage of a recent study of Black American families in which family stress, such as economic stress and maternal psychological distress in single-family households, was linked to engagement in risky sex by adolescents (Brown, Simons, & Gibbons, 2021)
- Discussion of the development of lesbian and gay relationships in adolescence
- *Connecting with Careers* profile on Bonnie Halpern-Felsher, University Professor in Pediatrics and Director of Community Efforts to Improve Adolescents' Health, who also coordinates

the STEP-UP program (Short-Term Research Experience for Underrepresented Persons) in which she has personally mentored and supervised middle and high school students since 2007

- Updated data indicating that in 2020, ethnic variations still characterized rates of adolescent pregnancy, but that rates are declining significantly among all ethnic groups (Martin & others, 2022)
- Inclusion of a recent study of 15-year-olds that found adolescents who consistently lived in poverty neighborhoods had the highest levels of poverty and anxiety (King & others, 2022). Adolescents who previously lived in poor neighborhoods but were able to exit them later showed no difference in depression and anxiety compared with adolescents who never lived in poor neighborhoods. All of these findings affected girls more than boys.
- Coverage of disparities in adolescent health status related to poverty and ethnicity during the COVID-19 pandemic, especially in Black American and Latino families (Heard-Garris & others, 2021)
- Coverage of a national survey in which adolescent girls were much less likely than boys to have engaged in physical activity for 60 minutes or more per day in each of the last seven days (15.4 percent of girls compared with 30.9 percent of boys) (Underwood & others, 2020). Also, non-Latino White boys exercised the most and Black American girls the least.
- Description of a recent study of 10- to 14-year-olds that found being physically inactive was associated with being a girl, not having sports facilities in the neighborhood, and not perceiving the neighborhood as a safe place (Judice & others, 2021)
- New coverage of the high and increasing rates of firearm homicide in Black American adolescent boys and emerging adult men (Centers for Disease Control and Prevention, 2022)
- Updated data on the continuing decline in the number of school dropouts overall and separately for Black American, Latino, Asian American, and non-Latino adolescents (National Center for Education Statistics, 2022)
- New data indicating that in 2020, the dropout rate for Black American adolescents (4.2 percent) was lower than for non-Latino White adolescents (4.8 percent) for the first time (National Center for Education Statistics, 2022)
- New content indicating that 90 percent of participants in the "I Have a Dream Program" graduate from high school, compared with an overall graduation rate of 74 percent among students from low-income backgrounds (I Have a Dream Foundation, 2021)

Chapter 12: Socioemotional Development in Adolescence

- Inclusion of a recent study that found regardless of neighborhood context and socioeconomic advantage or disadvantage, adolescents' capacity for self-regulation predicted academic achievement (Davisson, Hoyle, and Andrade, 2021)
- Section on "Cultural and Ethnic Identity"
- Discussion of a recent study of Latino emerging adults in which the bicultural harmony component of bicultural identity development was linked to lower levels of psychological stress (Cano & others, 2021)
- Coverage of a recent study in which Latino youth showed enhanced resilience against discrimination encounters

when they had more family ethnic socialization experiences and engaged in greater ethnic identity exploration and resolution (Martinez-Fuentes, Jager, & Umaña-Taylor, 2021)

- Inclusion of research by Adriana Umaña-Taylor and her colleagues (Safa & Umaña-Taylor, 2021; Umaña Taylor & Drake, 2022) indicating that a positive ethnic identity is related to favorable outcomes for ethnic minority adolescents
- New *Connecting with Careers* profile on Adriana Umaña-Taylor, a professor and researcher of ethnic-racial identities who studies immigrant families in the United States
- Discussion of cross-cultural variations in adolescent religion (Jensen, 2021)
- Inclusion of a recent study of young adolescents indicating that for those who were non-Latino White or Asian American, higher academic achievement was linked to having same-ethnicity friends, while for Black American and Latino adolescents, higher academic achievement was associated with having more cross-ethnicity friendships (Chen, Saafir, & Graham, 2020)
- Section on “Dating in Gay and Lesbian Youth”
- Main section on “Cross-Cultural Comparisons” that explores aspects of health, gender, family, and peers
- Coverage of research on cross-cultural comparisons of adolescents’ use of time (Larson, 2020)
- Extensive expansion and updating of content on socioeconomic status and poverty (van Zweiten & others, 2021)
- Coverage of a recent research review of adolescents that concluded low SES is associated with lower volume and surface area of the brain’s frontal lobes, amygdala, and hippocampus (Rakesh & Whittle, 2021)
- Inclusion of a recent study of adolescents in which lower SES assessed in early adolescence was linked to lower cognitive control and higher risk-taking in late adolescence (Briant & others, 2021)
- Discussion of a recent meta-analysis that concluded low SES is a meaningful contributor to lower cognitive ability and achievement in adolescents (Korous & others, 2021)
- Extensive expansion and updating of content on adolescent ethnicity, including an emphasis that adolescence and emerging adulthood are times of significant ethnic identity development (Umaña-Taylor & Drake, 2022)
- Description of a recent study of undocumented Guatemalan immigrant adolescents that found loneliness, social isolation, and difficult parental working conditions were associated with depressive symptoms (Chavez, Gonzales-Backen, & Grzyacz, 2021)
- New section on “Racism and Discrimination”
- Discussion pointing out that indigenous people have long been targets of discrimination and racism, yet their experiences with marginalization have often received inadequate attention (NETWORK, 2021)
- Coverage of recent research indicating that although Asian American adolescents had less anxiety and school isolation than non-Latino White adolescents, they encountered more discrimination (Luther, Ebbert, & Kumar, 2021)

- New content on the “Intentional Parenting for Equity and Justice” program that emphasizes having deliberate and purposeful conversations and engaging in activities that increase children’s and adolescents’ awareness of racial inequities and injustices (Hughes, Fisher, & Cabrera, 2020)
- Description of a recent study in which neighborhood poverty was linked to delinquency in adolescence, especially through maternal stress and adverse childhood experiences (Wang, Choi, & Shin, 2020)

Chapter 13: Physical and Cognitive Development in Early Adulthood

- Updated data on obesity in different ethnic groups (Hales & others, 2020)
- Coverage of a recent study in which women, especially those who were overweight, reported increased anxiety, depression, and loneliness during the COVID-19 pandemic (Lofrano-Prado & others, 2021)
- Main section on “Sexual Orientation and Behavior” that focuses on gay, lesbian, and bisexual individuals
- Inclusion of a recent study in which sexual minority reports of general discrimination, victimization, and health care discrimination peaked in early adulthood and in middle adulthood (Rice & others, 2021)
- Updated data indicating that in 2019, approximately 1.2 million people in the United States were living with an HIV infection (HIV.gov, 2021). Also in 2019, approximately 34,800 new HIV infections were diagnosed in the United States (HIV.gov, 2021).
- Updated global data showing that the total number of individuals living with HIV was 37.7 million in 2021, with the majority of individuals with HIV living in sub-Saharan Africa (UNAIDS, 2022). Worldwide there were 1.5 million new cases of HIV in 2020, a reduction of 52 percent since the peak in 1997 (UNAIDS, 2021).
- Content on how there is an increasing effort to reduce HIV infections through pre-exposure prophylaxis (PrEP), which involves taking a daily pill that can reduce the probability of getting HIV by as much as 90 percent (Moskowitz & others, 2021)
- Discussion of the No Means No Worldwide program (2021) that has been effective in reducing the incidence of sexual assault in the African countries of Kenya and Malawi
- New *Connecting with Careers* profile on Anna Boyer-Chadwick, an academic advisor whose university’s advising and retention program is a nationally recognized model for promoting academic success among Latino students

Chapter 14: Socioemotional Development in Early Adulthood

- Section on “Cross-Cultural Variations in Romantic Relationships” (Joo & others, 2022)
- Inclusion of a recent study of 1.8 million online daters from 24 countries in which resource-acquisition ability (indicated by level of education and income) was positively linked to the

amount of attention received from other site users (Jonason & Thomas, 2022)

- Cross-cultural information on percentages of adults who are cohabiting (Smart & Schwartz, 2020)
- Description of cross-cultural variations in age at first marriage (Smock & Schwartz, 2020)
- Expanded and updated content on transgender adults (Vyas & others, 2021)
- Inclusion of a recent study of transgender individuals in which gender affirmation—being recognized as one’s gender identity, gender expression, or gender role—was associated with a lower probability of suicidal ideation and psychological distress, while discrimination was linked to a higher probability of suicidal ideation and psychological distress (Lelutiu-Weinberger, English, & Sandanapitchai, 2020)
- Discussion of a recent study that indicated victimization and discrimination against transgender individuals predicted an increase in their suicidal ideation while community connectedness reduced their suicidal ideation (Rabasco & Andover, 2021)
- Description of recent research that found psychotherapy targeting internalized stigma and non-affirmation experiences can be effective in reducing gender-related stress and improving resilience (Budge, Sinnard, & Hoyt, 2020)
- New *Connecting with Careers* feature on Stephanie Budge, a psychotherapist and college professor who specializes in transgender research
- New section titled “Going Beyond Gender as Binary” that discusses Janet Shibley Hyde and her colleagues’ (2019) recent conclusion that gender is a mosaic that includes multiple categories rather than a binary dichotomy between girls/women and boys/men

Chapter 15: Physical and Cognitive Development in Middle Adulthood

- Discussion of a study in China that revealed women in the Mosuo culture (a matriarchal tribe in southern China where women have the dominant role in society, don’t marry, and can take on as many lovers as they desire) had fewer negative menopausal symptoms, higher self-esteem, and better family support than Han Chinese women (the majority ethnic group in China) (Zhang & others, 2016)
- Inclusion of a recent cross-cultural study that found middle-aged women in China and Japan had a lower prevalence of hot flashes than their counterparts in the United States and Canada (Shea, 2020)
- Coverage of how women have consistently shown a stronger interest in religion and spirituality than men have (Pew Research Center, 2016)

Chapter 16: Socioemotional Development in Middle Adulthood

- Section on “Stress and Gender” that includes Shelley Taylor’s (2018) observation that when women experience stress, they often engage in a tend-and-befriend coping pattern that involves seeking social alliances with others

- Section on “Gender Contexts” emphasizing that the view of midlife as a negative age period for women is stereotypical and inaccurate
- Section on “Cultural Contexts”
- Coverage of a recent study in 61 countries that found individuals with above-average optimism had better well-being (Baranski & others, 2021)
- Content indicating that women are more likely than men to seek a divorce during middle age and information on the reasons they are likely to seek a divorce
- Description of a longitudinal study that revealed women who were 50 years of age and older at the time of divorce experienced a 45 percent drop in their standard of living, whereas men who were divorced at this age experienced a 21 percent drop (Lin & Brown, 2021). While repartnering reversed most of the economic costs of divorce for women, few formed new co-residential partnerships following the divorce.
- Inclusion of a recent study in which approximately 22 percent of women and 37 percent of men repartnered within 10 years after a gray divorce (Brown & others, 2019)
- Content on how grandmothers have more contact with grandchildren than grandfathers do, possibly because women tend to define their role as grandmothers as part of their responsibility for maintaining family ties across generations
- Discussion of how women play a more important role in maintaining family relationships across generations than men do (Lopes & others, 2022)
- Discussion of a research review of studies in 10 countries that revealed grandchildren raised by grandparents had adverse mental/behavioral health and educational outcomes compared with their peers raised by biological parents (Xu & others, 2022)

Chapter 17: Physical Development in Late Adulthood

- New content and recent data on ethnic and gender differences in life expectancies, including decreases in life expectancy in 2020 because of the COVID-19 pandemic (Arias, Tejada-Vera, & Ahmad, 2021)
- Coverage of life expectancies around the world, with the highest estimated life expectancy at birth (89.4 years) in Monaco and the lowest estimated life expectancy (54 years) in the Central African Republic, Chad, and Nigeria (World Bank, 2019)
- Predictions of life expectancies in 2030, with the most rapid increase in Korea, which is expected to be the first country to reach a life expectancy of 90 years for women (Kontis & others, 2017), while the United States is predicted to have one of the lowest rates of increase among the countries studied
- Updated data indicating that in June 2022, the oldest living person in the world was 118-year-old Lucile Randon of France, and the oldest living person in the United States was 114-year-old Bessie Hazel Plummer of Massachusetts
- Inclusion of a recent study in which older lesbian, gay, and bisexual adults were as likely to remain sexually active as older heterosexuals (Brennan-Ing & others, 2021). Gay and bisexual men were more likely than heterosexual men to report sexual problems.

- New and updated content indicating that heart disease is the main cause of death in non-Latino Whites, Black Americans, and Native Americans, followed by cancer (Heron, 2021). However, cancer was the main cause of death in Latinos and Asian Americans, followed by heart disease.

Chapter 18: Cognitive Development in Late Adulthood

- Coverage of a recent study of older Mexican adults linking higher educational attainment to better cognitive ability (Saenz & others, 2020)
- Coverage of a recent study of almost 350,000 50- to 75-year-olds that indicated non-Latino White men and women were more likely to be working after age 50 than Black American men and women and Latinos (Moen & others, 2022), with all three employment pathways (long-hour, full-time, and part-time) more common for college-educated non-Latino White men in their sixties. Highly educated Asian American men were more likely than non-Latino White men to work full-time in late adulthood than Black American and Latino men.
- Expanded content on depression in older adults, including the fact that older adult Black American men tend to underreport depression symptoms because of the stigma associated with it
- Inclusion of a recent review in which depression and impaired white matter functioning (axon and myelin sheath connectivity and transfer in the brain) were described as two known risk factors for dementia that more strongly relate to negative outcomes for Black Americans than non-Latino Whites (Zahodne, 2021)
- Updated data on the incidence of Alzheimer disease, including age, gender, and ethnicity variations (Alzheimer's Association, 2022)
- Coverage of a recent study of middle-aged and older adults that found infrequent religious service attendance was related to poorer cognitive functioning (Henderson & others, 2022). Greater religiosity was associated with better cognitive functioning among Black American women but lower cognitive functioning among non-Latino White men and women (Henderson & others, 2022).
- Description of a recent study that revealed older women had higher levels of spirituality than did older men (Bailly & others, 2018)

Chapter 19: Socioemotional Development in Late Adulthood

- Inclusion of a recent research review in 45 countries that concluded ageism led to worse health outcomes for older adults, especially in less-developed countries where people were less educated (Chang & others, 2020)
- Discussion of a recent large-scale study of 20 countries in which the United Kingdom was characterized by the highest ageism while Sri Lanka had the lowest ageism (Ng & Lim-Soh, 2021)
- New content indicating that for many Black American older adults who are poor, their poverty emerged over their life

course, especially for those who repeatedly experienced discrimination, racism, and barriers to educational access

- Discussion of a recent study of lesbian and gay older adults that revealed those who engaged in volunteer work had better physical health, more positive mental health, and less psychological distress than non-volunteers (Lyons & others, 2021)
- Description of how marriage might affect the health and well-being of LGBTQ older adults (Goldsen & others, 2017)
- Discussion of new content indicating that lack of access to health care in underrepresented ethnic groups leads to later detection of illness and thus higher mortality
- Coverage of a recent study of older adult Black Americans that found everyday discrimination was associated with higher levels of hopelessness and that religiosity helped to reduce hopelessness (Mitchell & others, 2021)
- Inclusion of content on the many aspects of society that discriminate against ethnic minority older adults as well as a description of some of the strengths of ethnic minority older adults (Chatters, Taylor, & Taylor, 2021)
- Updated *Connecting with Careers* profile on Norma Thomas, a social work professor and administrator whose work focuses on improving lives of ethnic minority older adults
- Description of a recent study of more than 40 million middle-aged and older adult Black American and non-Latino men and women in which workplace discrimination was highest for Black American women (25 percent) and lowest for non-Latino White men (11 percent) (Fekedulegn & others, 2019)
- Inclusion of factors that are associated with whether older adults are accorded a position of high status in a culture (Sangree, 1989)
- Coverage of a recent study that indicated collectivist countries showed less age bias and greater feelings of warmth toward older adults than did individualist countries (Ackerman & Chopik, 2021)

Chapter 20: Death, Dying, and Grieving

- Cross-cultural comparisons of circumstances surrounding death in multiple places in the chapter
- Discussion of the countries in the world where assisted suicide is legal
- Description of a recent analysis that revealed a spouse's death impacted women and men differently (Streeter, 2020), with women experiencing a 22 percent decline in income in the two years following the death of a spouse, while men's financial status stayed relatively stable but their emotional and mental health worsened following spousal death due to increasing rates of loneliness and depression
- Inclusion of a recent research review of widowed Latinos that found risk factors for diminished well-being were being a man, financial strain, cultural stressors, having an undocumented legal status, experiencing widowhood at a younger age, and having poor physical health (Garcini & others, 2021)

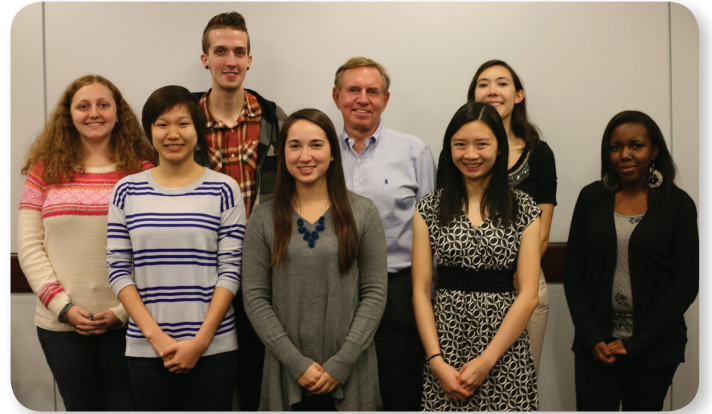
about the author

John W. Santrock

John Santrock received his Ph.D. from the University of Minnesota. He taught at the University of Charleston and the University of Georgia before joining the Program in Psychology at the University of Texas at Dallas, where he currently teaches a number of undergraduate courses and received the University's Effective Teaching Award. In 2010, he created the UT-Dallas Santrock undergraduate travel scholarship, an annual award that is given to outstanding undergraduate students majoring in developmental psychology to enable them to attend research conventions. In 2019, he created an endowment that will provide the travel awards for students at UT-Dallas for decades to come. Additionally, Dr. Santrock and his wife, Mary Jo, created a permanent endowment that will provide academic scholarships for six to ten undergraduate psychology students per year, with preference given to those majoring in developmental psychology.

John has been a member of the editorial boards of *Child Development* and *Developmental Psychology*. His research on father custody is widely cited and used in expert witness testimony to promote flexibility and alternative considerations in custody disputes. John also has authored these exceptional McGraw Hill texts: *Children* (15th edition), *Adolescence* (19th edition), *A Topical Approach to Life-Span Development* (11th edition), *Educational Psychology* (7th edition), and *Psychology* (7th edition).

For many years, John was involved in tennis as a player, teaching professional, and coach of professional tennis players. At the University of Miami (FL), the tennis team on which he played still holds the NCAA Division I record for most consecutive wins (137) in any sport. John has been married for five decades to his



John Santrock (back row middle) with recipients of the Santrock Travel Scholarship Award in developmental psychology. Created by Dr. Santrock, this annual award provides undergraduate students with the opportunity to attend a professional meeting. A number of the students shown here attended the meeting of the Society for Research in Child Development.

Jessica Serna

wife, Mary Jo, who created and directed the first middle school program for children with learning disabilities and behavioral disorders in the Clarke County Schools in Athens, Georgia. More recently, Mary Jo has worked as a Realtor. John and Mary Jo have two daughters—Tracy, who worked for a number of years as a technology marketing specialist, and Jennifer, who has been a medical sales specialist. Both have followed in their mother's footsteps and are now Realtors. Jennifer was inducted into the SMU sports hall of fame, only the fifth female to ever have been given this award. John and Mary Jo have one granddaughter, Jordan, age 29, who works for the accounting firm CBIZ, and two grandsons, Alex, age 18, and Luke, age 16. In the last two decades, John also has spent time painting divisionist and expressionist art.

Dedication:

**With special appreciation to my mother,
Ruth Santrock, and my father, John Santrock.**

expert consultants

Life-span development has become an enormous, complex field, and no single author, or even several authors, can possibly keep up with all of the rapidly changing content in the many periods and different areas of life-span development. To solve this problem, author John Santrock has sought the input of leading experts about content in a number of areas of life-span development. These experts have provided detailed evaluations and recommendations in their area(s) of expertise.

The following individuals were among those who served as expert consultants for one or more of the previous editions of this text:

Urie Bronfenbrenner, *Cornell University*

K. Warner Schaie, *Pennsylvania State University*

Paul Baltes, *Max Planck Institute, Berlin*

Laura Carstensen, *Stanford University*

Tiffany Field, *University of Miami*

James Birren, *University of Southern California*

Jean Berko Gleason, *Boston University*

Charles Nelson, *Harvard University*

Gilbert Gottlieb, *University of North Carolina—Chapel Hill*

Karen Adolph, *New York University*

Joseph Campos, *University of California—Berkeley*

George Rebok, *Johns Hopkins University*

Jean Mandler, *University of California—San Diego*

James Marcia, *Concordia University*

Andrew Meltzoff, *University of Washington*

Martha Ann Bell, *Virginia Tech University*

Elizabeth Susman, *Pennsylvania State University*

David Almeida, *Pennsylvania State University*

John Schulenberg, *University of Michigan*

Margie Lachman, *Brandeis University*

Crystal Park, *University of Connecticut*

James Garbarino, *Cornell University*

Elena Grigorenko, *Yale University*

William Hoyer, *Syracuse University*

Ross Parke, *University of California—Riverside*

Ross Thompson, *University of California—Davis*

Phyllis Moen, *University of Minnesota*

Ravenna Helson, *University of California—Berkeley*

Patricia Reuter-Lorenz, *University of Michigan*

Toni Antonucci, *University of Michigan*

Scott Johnson, *University of California—Los Angeles*

Patricia Miller, *San Francisco State University*

Amanda Rose, *University of Missouri—Columbia*

Arthur Kramer, *University of Illinois*

Karen Fingerman, *Purdue University*

Cigdem Kagitcibasi, *Koc University*

Robert Kastenbaum, *Arizona State University*

Following are the expert consultants for the nineteenth edition, who (like those of previous editions) literally represent a *Who's Who* in the field of life-span development.



Courtesy of Deborah Carr

Deborah Carr is one of the world's leading experts on the social aspects of older adults' lives and on death, dying, and grieving. She obtained her Ph.D. from the University of Wisconsin and currently is professor of sociology and director of the Center for Innovation in Social Science at Boston University. Dr. Carr is a life course sociologist who specializes in stress and health,

widowhood, end-of-life issues, body weight, and later-life family relationships. She is the author of more than 100 journal articles and book chapters, and she is the author or editor of several books including the award-winning *Golden Years? Social Inequality in Later Life*, *Handbook of Aging and the Social Sciences*, 9th ed., *Spousal Bereavement in Later Life*, *Encyclopedia of the Life Course and Human Development*, and *Worried Sick: Why Stress Hurts Us and What to Do About It*. Her most recent book is *Aging in America* (2023). Dr. Carr is a fellow of the Gerontological Society of America and was editor-in-chief of *Journal of Gerontology: Social Sciences* (2015–2020).

"I read chapters 17–19. They are written at an appropriate level for undergraduates, and each chapter clearly conveys the author's deep knowledge of and passion for the field of aging and human

development. The three chapters share the same strengths: a very detailed yet concise review of a vast number of literatures, clear attention to biological processes involved in aging, and a good balance of facts and personal vignettes to help bring the material to life. The chapters' box features and end-of-chapter materials are excellent pedagogical tools. Kudos to John Santrock for a remarkably detailed, thoughtful, and comprehensive textbook of human development!" —**Deborah Carr**, *Boston University*



Courtesy of John Schulenberg

John Schulenberg is one of the world's leading experts on adolescence and early adulthood. He is currently a professor in the department of psychology and a research professor in the Institute for Social Research at the University of Michigan. His research expertise focuses on developmental transitions in adolescence and early adulthood, especially concerning substance use and abuse, and health and wellbeing. He is the Principal Investigator of the U.S. Monitoring the Future Panel Study on the epidemiology and etiology of substance use from adolescence through adulthood. Dr. Schulenberg is a Fellow of the American

Psychological Association and a previous President of the Society for Research on Adolescence. Over the past 30 years he has mentored numerous graduate students, post-docs, and beginning faculty members. Dr. Schulenberg's research has been funded by NIAAA, NICHD, NIDA, NIMH, NSF, RWJF, Spencer, and WT Grant; for these and other institutes and foundations, he has served on numerous advisory and review committees. He was a member of the National Academy of Medicine's consensus committee on Health and Well-Being during the Transition to Adulthood that recently published *Investing in the Health and Well-Being of Young Adults*. Dr. Schulenberg also has coached youth community and travel baseball and softball teams for 14 years.

"I enjoyed reading these excellent chapters. I reviewed previous versions of these chapters for the previous edition of this book, and I see that these chapters continue to evolve in a positive and compelling way. I noticed with great interest and admiration that John Santrock included many new cites to the relevant literature. The field is expanding rapidly, with greater attention to diversity in samples and perspectives . . . this is very well reflected in the text. I suspect that some wonder if frequent new additions are needed (with this being the 19th edition!), but with the field moving so quickly, it is absolutely necessary, and I think the versions of these chapters reflect well what is new (and to help verify that some "old truths" remain). And of course, the world is somewhat different now with the pandemic, and appropriately, research that covers COVID-19 is given good attention. Also, the real-life examples, "developmental connections," various touchpoints throughout the chapters, and the review material at the end work well to encourage and maintain student interest and focus. There is a whole lot to like in these chapters, with considerable depth and breadth on central topics, with extensive attention to diversity, and impressive inclusion of more recent research along with classic findings. Finally, I can easily imagine that readers will really like these chapters, which are all aimed at encouraging learning and understanding." —**John Schulenberg, University of Michigan**



Courtesy of Claudia Johnstone

Suniya Luthar is one of the world's leading experts on diversity, risk, resilience, and prevention in children and adolescents. She currently is the founder and executive director of AC Groups, a nonprofit organization that fosters resilience and well-being using the evidence-based Authentic Connections Groups intervention. She is also Professor Emerita at Columbia University's Teachers College, and Co-Founder Emerita at Authentic Connections Co., a company that surveys school communities. After obtaining her Ph.D. from Yale University, Dr. Luthar served on the faculty of the Department of Psychiatry and the Child Study Center at Yale. Subsequently, she was a professor at Columbia University's Teachers College, where she also served as Senior Advisor to the Provost. Next, Dr. Luthar became Foundation Professor of Psychology at Arizona State University. She has held several leadership positions in science and been given many awards including the Boyd McCandless Young Scientist Award from the American Psychological Association, a Research Scientist Development Award from the National Institutes of Health, an American Mensa Foundation Award for Excellence in Research on Intelligence, an award for Integrity and Mentorship from the Society for Research in Child Development's Asian Caucus, and the Society for Research on Adolescence Hill Award for distinguished contributions to research on adolescents.

"John Santrock's text is comprehensive and clearly presented, in a style that is readily accessible for college students. There is coverage

of the 'classic works' such as those of Piaget, Freud, and Erikson, as well as the most recent findings in developmental science. Examples of the latter include studies on the effects of social media, adjustment in youth during COVID, along with major risk and protective factors, and scientific reconceptualization of childhood resilience as resting, foremost, on the well-being of primary caregivers (which in turn requires ongoing support for the adults). Besides presenting theories and empirical evidence, Dr. Santrock also discusses evidence-based interventions that can help boost functioning in particular domains and at different developmental stages. . . . This is a terrific textbook!" —**Suniya Luthar, Columbia University**



Courtesy of Patricia A. Reuter-Lorenz

Patricia Reuter-Lorenz is one of the world's leading experts on cognitive neuroscience and aging. She currently is the Michael I. Posner Professor of Psychology and Neuroscience at the University of Michigan. Dr. Lorenz obtained her master's and doctoral degrees from the University of Toronto and did postdoctoral training in cognitive neuroscience at Cornell Medical Center in New York City. In addition to serving as department chair from 2015–2022 at the University of

Michigan, she earlier co-directed the International Max Planck Research School in Life Span Development in Germany, served as Co-Editor-in-Chief of *Aging, Neuropsychology & Cognition*, and section editor for *Neuropsychologia*. She has published research on a wide range of topics from neurocognitive aging to neuropsychological studies of attention, unilateral neglect, eye movement control, laterality, executive functions, and working memory. Dr. Reuter-Lorenz has been given numerous awards and recognition for her research, mentorship, and teaching, including election as a fellow of the American Association for the Advancement of Science, Outstanding Mentor Award from the American Psychological Association, and the Justine and Yves Sergent Prize for International Research in Cognitive Neuroscience. Dr. Reuter-Lorenz is cofounder of the Cognitive Neuroscience Society and has played a leadership role in this organization for over twenty-five years.

"I was impressed by the scope and accessibility of the material covered, and I was impressed by the coverage of diversity-related material. Also, the breadth, clarity, accessible prose, and helpful examples are strengths." —**Patricia Reuter Lorenz, University of Michigan**



Courtesy of Gil Yost

Elizabeth Vera is a leading expert on the roles of culture, ethnicity, education, and social justice in children's and adolescents' development. She is currently a professor in the School of Education at Loyola University Chicago. Dr. Vera obtained her Ph.D. in Counseling Psychology from The Ohio State University. She teaches undergraduate education courses and graduate courses

including Prevention, Advocacy, and Outreach; Human Development; and Adolescent Psychology. Her research interests include promoting educational and socioemotional development in culturally and linguistically diverse youth; implementation of prevention and outreach efforts in school settings; and critical social justice applications in the field of psychology. Dr. Vera has published over 100 scholarly products in psychology and education journals. She currently is an Associate Editor of *The Counseling Psychologist* and has been on the editorial boards of the *Journal of Counseling Psychology*, *Training and Education in Professional Psychology*, *Journal of Latino*

Psychology, Cultural Diversity and Ethnic Minority Psychology, Child Development, and The Counseling Psychologist. She is a fellow in two American Psychological Association Divisions: Counseling Psychology and Culture, Ethnicity, and Race. Dr. Vera also has received The Derald Wing Sue Award for Distinguished Contributions to Multicultural Counseling and a Lifetime Contribution Award from the Prevention Section of the Division of Counseling Psychology.

"As an instructor for developmental courses, I know how hard it is to be comprehensive and vet the literature for textbook purposes. I feel that this text does a good job giving students a comprehensive overview of a lifespan perspective. There are many strengths from the consumer side in the readability and range covered in the text. . . . There are many other strengths to these chapters including their readability, and inclusion of updated findings. Specifically, I appreciated the section on cultural bias in moral development, as well as the differentiation between conventional rules and moral rules. The discussion of COVID-19 and schools is also very relevant. And the sections on growth mindset are a strength and there is a good section on screen time." —Elizabeth Vera, Loyola University Chicago



Courtesy of Joshua Kukus

Ming Cui is a leading expert in family relations and child development. She obtained her Ph.D. from Iowa State University in Sociology. She currently is a professor and Graduate Program Director in the Human Development and Family Science Department at Florida State University. Her research interests include adolescent and young adult development, family processes and parenting, cultural variations, and research methods and statistics. Dr. Cui has published articles in leading journals such as the *Journal of Marriage and Family*, *Family Relations*, *Child Development*, *Cross-Cultural Research*, *Developmental Psychology*, and *Journal of Child and Family Studies*. She currently serves as an associate editor for the journal *Emerging Adulthood*, guest editor for *Journal of Social and Personal Relationships*, and editorial board member for *Journal of Youth and Adolescence*, *Adolescent Research Review*, *Journal of Social and Personal Relationships*, and *Journal of Adult Development*. Dr. Cui also has been given numerous awards, including a Fulbright Scholar Award (to Finland) from the U.S. Department of State and a New Contribution Award from the International Association for Relationship Research.

"There are many strengths in this textbook. It is easy to read and understand. The flow and structure in the chapters are consistent across each developmental period, which facilitate a better

understanding of development across the life span. Each chapter starts with examples that engage students. The 'Review Connect Reflect' at the end of each section and 'Reach Your Learning Goals' at the end of each chapter are helpful for students to summarize and reflect. It is important to note that the author has made some serious efforts at obtaining the most up-to-date statistics and findings from research studies. I applaud the author for making such efforts. With its easy-to-read and up-to-date content, this book takes the students on a journey through the life span." —Ming Cui, Florida State University



Courtesy of Erika Sandborne

Phyllis Moen is one of the world's leading experts on work, retirement, and gender disparities. She is director of the Life Course Center on the Demography and Economics of Aging at the University of Minnesota, an interdisciplinary center funded by the National Institute on Aging that encourages analysis of large data sets to capture life-course trajectories and transitions promoting or ameliorating disparities in later adult engagement and health. She is also a professor of sociology and holds a McKnight presidential chair. Dr. Moen's research agenda focuses on the effects of macro-structural changes—especially around paid work—as they shape health and well-being at the intersections of gender, age/family life stage, race, and class. She investigates the timing, duration, sequencing, and health effects of employment, working conditions, and retirement as they play out in distinctly gendered and unequal life courses. She is the author of *Overload: How Good Jobs Went Bad and What We Can Do About It* (with Erin Kelly, Princeton University Press, 2020), which captures the harmful (and salutary) health, well-being, and family impacts of certain job conditions, including shifts in employee control over their working times and places, using natural experiment and randomized field experiment designs to capture causal processes. Her other recent books include *The Career Mystique: Cracks in the American Dream*, with Pat Roehling (Rowman & Littlefield, 2005) and *Encore Adulthood: Boomers on the Edge of Risk, Renewal, and Purpose* (Oxford University Press, 2016). Her current work with Wen Fan examines the experiences of remote workers during COVID-19.

"In the chapter 'Physical and Cognitive Development in Early Adulthood', the strengths are how interesting and informative the content is. Another strength is it has a strong framework. In the chapter 'Physical and Cognitive Development in Middle Adulthood', the narrative (and perspective) reflects the latest and most important research in the field and I like the emphasis on change." —Phyllis Moen, University of Minnesota

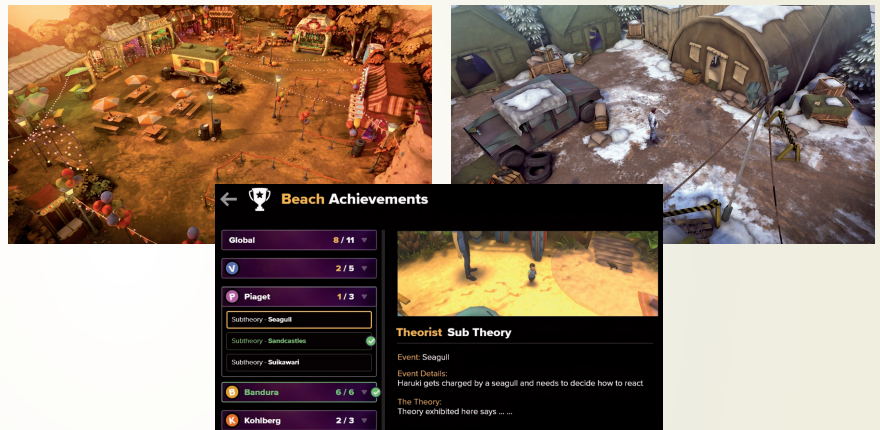
Connecting *research* and *results*

As a master teacher, John Santrock connects current research and real-world applications. Through an integrated, personalized digital learning program, students gain the insight they need to study smarter and improve performance.

McGraw Hill Connect is a digital assignment and assessment platform that strengthens the link between faculty, students, and coursework, helping everyone accomplish more in less time. *Connect Psychology* includes assignable and assessable videos, quizzes, exercises, and interactivities, all associated with learning objectives. Interactive assignments and videos allow students to experience and apply their understanding of psychology to the world with fun and stimulating activities.



Apply Concepts and Theory in an Experiential Learning Environment



An engaging and innovative learning game, **Quest: Journey Through the Lifespan®** provides students with opportunities to apply content from their human development curriculum to real-life scenarios. Students play unique characters who range in age and make decisions that apply key concepts and theories for each age as they negotiate events in an array of authentic environments. Additionally, as students analyze real-world behaviors and contexts, they are exposed to different cultures and intersecting biological, cognitive, and socioemotional processes. Each quest has layered replayability, allowing students to make new choices each time they play—or offering different students in the same class different experiences. Fresh possibilities and outcomes shine light on the complexity of and variations in real human development. This new experiential learning game includes follow-up questions, assignable in Connect and auto-graded, to reach a higher level of critical thinking.

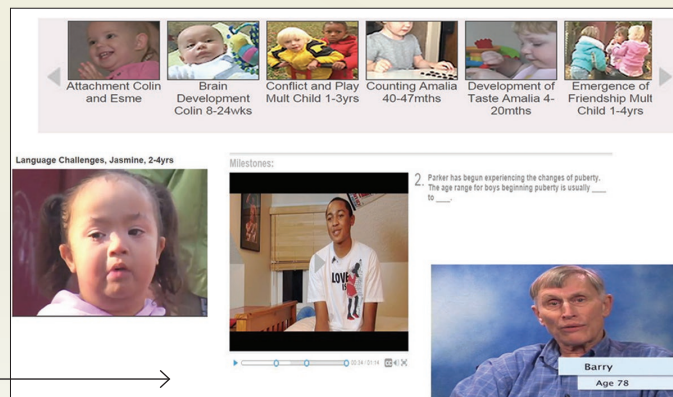
Diversity, Equity, and Inclusion

Substantial discussion in this edition is devoted to addressing issues of diversity, equity, and inclusion. When relevant, each chapter includes citations of studies and topical coverage that represent diverse U.S. and global populations. A complete listing of diversity, equity, and inclusion coverage can be found on pages xiv-xxii.

In addition, all of the *Connecting with Careers* features have been updated and include many new profiles that introduce the reader to a diverse group of active professionals. For example, pediatrician Terrance Weeden is a vocal advocate for LGBTQ youth; Anna Boyer-Chadwick is an academic advisor whose university's advising and retention program is a nationally-recognized model for Latino student success; and midwife Jennifer Nguyen works with diverse communities to reduce inequities in health care in rural and remote areas of Canada.

Real People, Real World, Real Life

At the higher end of Bloom's taxonomy (analyze, evaluate, create), the **McGraw Hill Milestones** video series is an observational tool that allows students to experience life as it unfolds, from infancy to late adulthood. This ground-breaking, longitudinal video series tracks the development of real children as they progress through the early stages of physical, social, and emotional development in their first few weeks, months, and years of life. Assignable and assessable within Connect Psychology, Milestones also includes interviews with adolescents and adults to reflect development throughout the entire life span. Milestones are available in an engaging, WCAG-compliant format. Ask your McGraw Hill representative about this new upgrade!

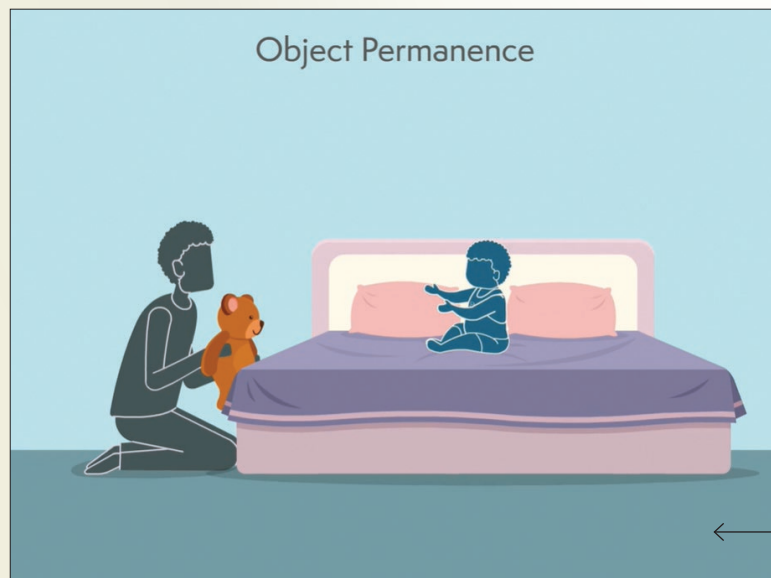
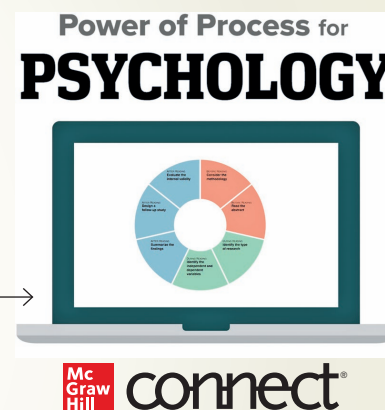


Develop Effective Responses

McGraw Hill's new **Writing Assignment Plus** tool delivers a learning experience that improves students' written communication skills and conceptual understanding with every assignment. Assign, monitor, and provide feedback on writing more efficiently and grade assignments within McGraw Hill Connect. Writing Assignment Plus gives you time-saving tools with a just-in-time basic writing and originality checker.

Prepare Students for Higher-Level Thinking

Also at the higher end of Bloom's taxonomy, **Power of Process** for Psychology helps students improve critical thinking skills and allows instructors to assess these skills efficiently and effectively in an online environment. Available through Connect, pre-loaded journal articles are available for instructors to assign. Using a scaffolded framework such as understanding, synthesizing, and analyzing, Power of Process moves students toward higher-level thinking and analysis.



Inform and Engage on Psychological Concepts

At the lower end of Bloom's taxonomy, students are introduced to **Concept Clips**—the dynamic, colorful graphics and stimulating animations that break down some of psychology's most difficult concepts in a step-by-step manner, engaging students and aiding in retention. They are assignable and assessable in Connect or can be used as a jumping-off point in class. For example, there are Concept Clips on topics such as object permanence and conservation, as well as theories and theorists like Bandura's social cognitive theory, Vygotsky's sociocultural theory, Buss's evolutionary theory, and Kuhl's language development theory.

New to this edition, Concept Clips feature a more modern visual style, updated scripts and assessment items, and enhanced accessibility.

Connect Media Sources to Content

Also at the lower end of Bloom's and located in Connect, **NewsFlash** is a multi-media assignment tool that ties current news stories, TedTalks, blogs, and podcasts to key psychological principles and learning objectives. Students interact with relevant news stories and are assessed on their ability to connect the content to the research findings and course material. NewsFlash is updated twice a year and uses expert sources to cover a wide range of topics, such as emotion, personality, stress, drugs, COVID-19, abilities and disabilities, social justice, stigma, bias, inclusion, gender, LGBTQA+, and many more.

Better Data, Smarter Revision, Improved Results



SMARTBOOK™

McGraw Hill's **SmartBook** helps students distinguish the concepts they know from the concepts they don't, while pinpointing the concepts they are about to forget. SmartBook's real-time reports help both students and instructors identify the concepts that require more attention, making study sessions and class time more efficient.

SmartBook is optimized for mobile and tablet use and is accessible for students with disabilities. Content-wise, measurable and observable learning objectives help improve student outcomes. SmartBook personalizes learning to individual student needs, continually adapting to pinpoint knowledge gaps and focus learning on topics that need the most attention. Study time is more productive and, as a result, students are better prepared for class and coursework. For instructors, SmartBook tracks student progress and provides insights that can help guide teaching strategies.

Online Instructor Resources



The resources listed here accompany *Life-Span Development*, Nineteenth Edition. Please contact your McGraw Hill representative for details concerning the availability of these and other valuable materials that can help you design and enhance your course.

Instructor's Manual Broken down by chapter, this resource provides chapter outlines, suggested lecture topics, classroom activities and demonstrations, suggested student research projects, essay questions, and critical thinking questions.

Test Bank and Test Builder This comprehensive Test Bank includes more than 1,500 multiple-choice, short answer, and essay questions. Organized by chapter, the questions are designed to test factual, applied, and conceptual knowledge. Test Builder is a cloud-based tool that enables instructors to format tests that can be printed and administered within a Learning Management System. Test Builder offers a modern, streamlined interface for easy content configuration that matches course needs without requiring a download. Test Builder enables instructors to:

- Access all test bank content from a particular title
- Easily pinpoint the most relevant content through robust filtering options
- Manipulate the order of questions or scramble questions and/or answers
- Pin questions to a specific location within a test
- Determine your preferred treatment of algorithmic questions
- Choose the layout and spacing
- Add instructions and configure default settings

PowerPoint Slides The PowerPoint presentations, WCAG compliant, highlight the key points of the chapter and include supporting visuals. All of the slides can be modified to meet individual needs.

Remote Proctoring Remote proctoring and browser-locking capabilities are seamlessly integrated within  **connect** +  **proctorio** to offer more control over the integrity of online assessments. Instructors can enable security options that restrict browser activity, monitor student behavior, and verify the identity of each student. Instant and detailed reporting gives instructors an at-a-glance view of potential concerns, thereby avoiding personal bias and supporting evidence-based claims.

preface

Making Connections . . . From My Classroom to *Life-Span Development* to You

Having taught life-span development every semester for more than three decades, I'm always looking for ways to improve my course and *Life-Span Development*. Just as McGraw Hill looks to those who teach the life-span development course for input, each year I ask the almost 200 students in my life-span development course to tell me what they like about the course and the text, and what they think could be improved. What have my students told me lately about my course and text? Students say that highlighting connections among the different aspects of life-span development helps them to better understand the concepts. They confirm that a *connections* theme provides a systematic, integrative approach to the course material. Thus, I have continued to use this theme to shape my current goals for my life-span development course, which, in turn, are incorporated into *Life-Span Development*:

1. **Connecting with today's students** To help students learn about life-span development more effectively.
2. **Connecting research to what we know about development** To provide students with the best and most recent theory and research in the world today about each of the periods of the human life span.
3. **Connecting developmental processes** To guide students in making developmental connections across different points in the human life span.
4. **Connecting development to the real world** To help students understand ways to apply content about the human life span to the real world and improve people's lives; and to motivate them to think deeply about their own personal journey through life and better understand who they were, are, and will be.

Connecting with Today's Students

In *Life-Span Development*, I recognize that today's students are as different in some ways from the learners of the last generation as today's discipline of life-span development is different from the field 30 years ago. Students now learn in multiple modalities; rather than sitting down and reading traditional printed chapters in linear fashion from beginning to end, their work preferences tend to be more visual and more interactive, and their reading and study often occur in short bursts. For many students, a traditionally formatted printed textbook is no longer enough when they have instant, 24/7 access to news and information from around the globe. Two features that specifically support today's students are the adaptive ebook, Smart-book (see page xxix), and the learning goals system.

The Learning Goals System

My students often report that the life-span development course is challenging because of the amount of material covered. To help today's students focus on the key ideas, the Learning

Goals System I developed for *Life-Span Development* provides extensive learning connections throughout the chapters. The learning system connects the chapter opening outline, learning goals for the chapter, mini-chapter maps that open each main section of the chapter, *Review*,



Connect, and *Reflect* questions at the end of each main section, and the chapter summary at the end of each chapter.

The learning system keeps the key ideas in front of the student from the beginning to the end of the chapter. The main headings of each chapter correspond to the learning goals that are presented in the chapter-opening spread. Mini-chapter maps that link up with the learning goals are presented at the beginning of each major section in the chapter.

Then, at the end of each main section of a chapter, the learning goal is repeated in *Review*, *Connect*, and *Reflect*, which prompts students to review the key topics in the section, connect to existing knowledge, and relate what they learned to their own personal journey through life. *Reach Your Learning Goals*, at the end of the chapter, guides students through the bulleted chapter review, connecting with the chapter outline/learning goals at the beginning of the chapter and the *Review*, *Connect*, and *Reflect* questions at the end of major chapter sections.

reach your learning goals

Physical Development in Infancy

1 Physical Growth and Development in Infancy

Patterns of Growth

Height and Weight

The Brain

LG1 Discuss physical growth and development in infancy.

- The cephalocaudal pattern is the sequence in which growth proceeds from top to bottom. The proximodistal pattern is the sequence in which growth starts at the center of the body and moves toward the extremities.
- The average North American newborn is 20 inches long and weighs 7.6 pounds. Infants grow about 1 inch per month in the first year and nearly triple their weight by their first birthday. The rate of growth slows in the second year.
- One of the most dramatic changes in the brain in the first two years of life is dendritic spreading, which increases the connections between neurons. Myelination, which speeds the conduction of nerve impulses, continues through infancy and even into adolescence.
- The cerebral cortex has two hemispheres (left and right). Lateralization refers to specialization of function in one hemisphere or the other. Early experiences play an important role in brain development.

Connecting Research to What We Know about Development

In order to include the most up-to-date research available, I closely look at specific areas of research, involve experts in related fields, and update the research throughout. *Connecting Through Research* describes a study or program to illustrate how research in life-span development is conducted and how it influences our understanding of the discipline. Half of the boxes in this edition are new, highlighting diverse research and researchers, including “Outcomes of Children Who Are Adopted in Gay, Lesbian, and Heterosexual Families” (Farr, 2017), “Effectiveness of an Emotion Coaching Intervention Program” (Qui & Shum, 2021), and “The Grief Process in Bereaved Individuals Before and During the COVID-19 Pandemic” (Eisma & Tamminga, 2020). (See “Content Revisions” starting on page xxxiv for a complete list of updates.)

The tradition of obtaining detailed, extensive input from a number of leading experts in different areas of life-span development also continues in this edition. Biographies and photographs of the leading experts in the field of life-span development appear on pages xxiv to xxvi, and the chapter-by-chapter highlights of new research content are listed on pages xxxiv to lviii. Finally, the research discussions have been updated in every period and topic. I expended every effort to make this edition of *Life-Span Development* as contemporary and up-to-date as possible. To that end, there are more than 1,500 citations from 2020 to 2022.

Connecting Developmental Processes

Development through the life span is a long journey, and too often we forget or fail to notice the many connections from one point in development to another. A significant number of these connections are made in the text narrative, and features are included to help students connect topics across the periods of development.

Connecting Through Research


Mother-Child Communication and the Language Development of Mexican-American Children from Low-Income Environments

Lauren Adamson

Key Points

- Researchers studied early mother-child communication in low-income Mexican American families
- Positive joint engagement at 2.5 years of age predicted superior language development later in childhood.
- Engaging in *respiro* (a traditional Latino parenting technique) did not alter these positive outcomes

A recent longitudinal study examined the role of early joint mother-child engagement in the language and literacy development of Mexican-American children from low-income homes (Adamson & others, 2021). These children often face challenges as sequential Spanish-English language learners. In this study, researchers recorded videos of 121 mothers and their 2.5-year-old children interacting in Spanish for 15 minutes. The researchers reliably rated features of mother-child interaction—such as shared routines, rituals, and connectedness—that are linked to improved language development in English-speaking children. A Mexican cultural concept—*respiro*—an important aspect of traditional Latino parenting, was assessed using two specific items—parental calm authority and child affiliative obedience. Further, maternal sensitivity, maternal language input quality, and child language productivity quality were assessed.



Based on the research described here, how would you advise Mexican-American parents living in low-income environments about communicating with their children?
FG Trade/Getty Images

Statistical analysis indicated that positive joint engagement at 2.5 years of age predicted children's superior expressive and receptive language at 3.6 years and receptive language at 7.3 years. This study demonstrated that culturally specific joint engagement (*respiro*) did not alter any aspects of positive joint engagement. These findings support the effectiveness of early parental communication quality for the language development of children from Mexican-American families in low-income environments, and also confirm that *respiro* in early parent-child engagement can align with general positive features of joint engagement.

Preface

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developmental connection

Executive Function

In early childhood, executive function especially involves developmental advances in cognitive inhibition, cognitive flexibility, goal-setting, and delay of gratification. Connect to “Physical and Cognitive Development in Early Childhood.”

Developmental Connections, which appear multiple times in each chapter, point readers to where the topic is discussed in a previous or subsequent chapter. *Developmental Connections* highlight links across age periods of development and connections between biological, cognitive, and socioemotional processes. These key developmental processes are typically discussed in isolation from each other, and students often fail to see their connections. Included in the *Developmental Connection* is a brief description of the backward or forward connection. For example, consider the development of the brain. In recent editions, I have significantly expanded content on the changes in the brain through the life span, including new coverage of changes in the brain during prenatal development and an expanded discussion of the aging brain in older adults. The prenatal brain discussion appears in “Prenatal Development and Birth” and the aging brain is described in “Physical Development in Late Adulthood.” An important brain topic that we discuss in these two chapters is neurogenesis, the production of new neurons. Connections between these topics in these two chapters are highlighted through *Developmental Connections*.

Topical Connections: Looking Back and Looking Forward

begin and conclude each chapter by placing the chapter's coverage in the larger context of development. These sections remind the reader of what happened developmentally in previous periods of development and make connections to topics that will be discussed in more detail.

Finally, a *Connect* question appears in the section self-reviews—*Review, Connect, and Reflect*—so students can practice making connections between topics. For example, in “Physical and Cognitive Development in Middle and Late Childhood,” students are asked to connect what they learned about attention in “Cognitive Development in Infancy” and “Cognitive Development in Early Childhood” with what they have just read about attention deficit hyperactivity disorder in the middle and late childhood chapter.

topical connections looking back

We have discussed that impressive advances occur in the development of the brain during infancy. Engaging in various physical, cognitive, and socioemotional activities strengthens the baby's neural connections. Motor and perceptual development also are key aspects of the infant's development. An important part of this development is the coupling of perceptions and actions. The nature-nurture issue continues to be debated with regard to the infant's perceptual development. In this chapter, you will expand your understanding of the infant's brain, motor, and perceptual development by further examining how infants develop their competencies, focusing on how advances in their cognitive development help them adapt to their world, and how the nature-nurture issue is a key aspect of the infant's cognitive and language development.

Connecting Development to the Real World

In addition to helping students make research and developmental connections, *Life-Span Development* shows the important connections between the concepts discussed and the real world. In recent years, students in my life-span development course have increasingly told me that they want more of this type of information. In this edition, real-life connections are explicitly made through the chapter opening vignette, *Connecting Development to Life*, the *Milestones* program that helps students watch life as it unfolds, and *Connecting with Careers*.

Each chapter begins with a story designed to increase students' interest and motivation to read the chapter. For example, “Cognitive Development in Late Adulthood” begins with a description of the remarkable Helen Small, who published her first book at age 91 and completed her undergraduate degree 70 years after she started college.

Connecting Development to Life describes the influence of development in a real-world context on topics including *From Waterbirth to Music Therapy*, *Increasing Children's Self-Esteem*, and *Health Care Providers and Older Adults*.

The *Milestones* program, described on page xxviii, shows students what developmental concepts look like by letting them watch actual humans develop. Starting from infancy, students track several individuals, seeing them achieve major developmental milestones, both physically and cognitively. Clips continue through adolescence and adulthood, capturing attitudes toward issues such as family, sexuality, and death and dying.

connecting development to life

Strategies for Parents and Their Young Adult Children

When adult children ask to return home to live, parents and their adult children should agree beforehand on the conditions and expectations. For example, they might discuss and agree on whether young adults will pay rent, wash their own clothes, cook their own meals, do any household chores, pay their phone bills, come and go as they please, be sexually active or drink alcohol at home, and so on. If these conditions aren't negotiated at the beginning, conflict often results because the expectations of parents and young adult children will likely be violated.

Parents need to treat young adult children more like adults than children and to let go of much of their parenting role. Parents should interact with young adult children not as dependent children who need to be closely monitored and protected but rather as adults who are capable of responsible, mature behavior. Adult children have the right to choose how much they sleep and eat, how they dress, whom they choose as friends and lovers, what career they pursue,

and lower grades/poorer adjustment in college students (Luebbe & others, 2018).

A new term that characterizes a number of parents today is “lawn mower parent”—a parent who goes to great lengths to prevent their child from experiencing adversity, stress, or failure. By “mowing down” obstacles and potential negative experiences for their children, these parents are not allowing their children to learn how to cope with such experiences themselves. After their children leave home, they are less capable of handling the pressure and challenges of life as they would have been if their parents had provided them more space to make decisions and learn how to cope on their own.

When they move back home, young adult children need to think about how they will need to change their behavior to make the living arrangement work. Elina Furman (2005) provides some good recommendations in *Boomerang*

Nation: How to Survive Living with Your Parents . . . the Second



What are some strategies that can help parents and their young adult children get along better?
Fuse/Getty Images

Connecting with Careers profiles careers ranging from an educational psychologist to a toy designer to a marriage and family therapist to a child life specialist to a geriatric nurse—each of which requires knowledge about human development.

All of the profiles have been updated and include many new profiles that introduce the reader to a diverse group of active professionals. For example, pediatrician Terrance Weeden is a vocal advocate for LGBTQ youth; Anna Boyer-Chadwick is an academic advisor whose university's advising and retention program is a nationally recognized model for Latino student success; and midwife Jennifer Nguyen works with diverse communities to reduce inequities in health care in rural and remote areas of Canada. (See "Content Revisions" starting on page xxxiv for a complete list of updates.)

The careers highlighted extend from the Careers Appendix that provides a comprehensive overview of careers in life-span development to show students where knowledge of human development could lead them.

Part of applying development to the real world is understanding its impact on oneself. An important goal I have established for my life-span development course and this text is to motivate students to think deeply about their own journey of life. To further encourage students to make personal connections to content in the text, *Reflect: Your Own Personal Journey of Life* appears in the end-of-section review in each chapter. This feature involves a question that asks students to reflect on some aspect of the discussion in the section they have just read and connect it to their own life. For example, students are asked:

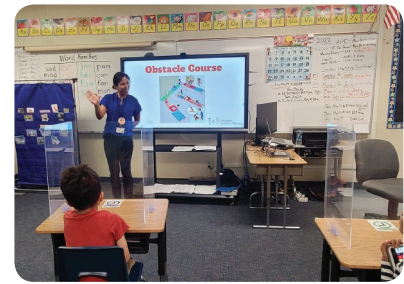
Do you think there is, was/will be a best age for you to be? If so, what is it? Why?

I always include this question in the first content lecture I give in life-span development, and it generates thoughtful and interesting class discussion. Early in the "Introduction" chapter is a research discussion on whether there is a best age to be, which includes recent research on the topic and a self-assessment that lets students evaluate their own life satisfaction. In addition, students are asked a number of personal connections questions in the photograph captions.

connecting with careers

Alyssa Cantal, Pediatric Occupational Therapist

Children who are or at risk for overweight or obesity often have less access to meaningful, satisfying activities than their normal-weight peers (Cantal, 2019). Occupational therapy practitioners provide the vital tools, framework, and interventions necessary to support children and their families. Alyssa Cantal is an occupational therapist at Gallagher Pediatric Therapy in Fullerton, California. After receiving her undergraduate degree in human development with a minor in psychology from the University of California–San Diego, she earned a Doctorate of Occupational Therapy at the University of Southern California. Cantal says her passion for working with others as well as her sister's experience as a pediatric physical therapist motivated her to pursue a career in rehabilitation. During her residency, she participated in "Imagining America: CREATE Your Vision," a community-based therapeutic arts program that guides children through health-related topics. Cantal's work has made her aware of disparities in weight by race, ethnicity, and physical ability. As a pediatric occupational therapist, she can play a pivotal role in promoting the health, well-being, and quality of life for all children.



Alyssa Cantal, pediatric occupational therapist, works with at-risk young children.
Courtesy of Dr. Alyssa Cantal

Content Revisions

A significant reason why *Life-Span Development* has been successfully used by instructors edition after edition 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 2020, 2021, and 2022, reflecting relevant classic and current findings by a diverse group of researchers.

New research and content that have especially been updated and expanded for this edition include health and well-being; development of the brain; culture and diversity; technology; and successful aging. Numerous updates based on recent world events appear throughout, including new research, statistics, and the effects of the COVID-19 pandemic.

Additionally, in order to provide students with more current examples of related and attainable career opportunities, all of the *Connecting with Careers* profiles have been updated, and many new profiles introduce the reader to more careers and a very diverse group of active professionals.

Following is a sample of the many chapter-by-chapter changes that were made in this new edition of *Life-Span Development*.

Chapter 1: Introduction

- Coverage of the very recent decline of approximately 1.5 years in U.S. life expectancy in 2020, with a 2.9-year drop for Black Americans and a 3-year decline for Latinos because of the staggering number of deaths during the COVID-19 pandemic (Centers for Disease Control and Prevention, 2021)
- Inclusion of new content on how the COVID-19 pandemic has disproportionately harmed older adults, making them more vulnerable to contracting a severe or deadly version of the disease as well as uprooting their lives by isolating them from family and friends (Kim & others, 2022; Panagiotou & others, 2021)
- Updated data on the increasing percentage of ethnic minority children in the United States, which in 2020 reached 52.3 percent (U.S. Census Bureau, 2020)
- New content how in 2020, the deadly effects of racial discrimination took center stage in the United States as not only Black Americans but also members of other groups protested the killing of Black Americans such as George Floyd by non-Latino White police officers
- Coverage of a recent review of research involving 3- to 19-year-old U.S. children and adolescents that concluded those living in lower socioeconomic settings were more likely to have higher levels of psychopathology (Peverill & others, 2021)
- Revised definition of gender, which is now described as a mosaic of categories related to femininity and masculinity based on social and cultural norms
- Updated U.S. poverty rates indicating that in 2019, 14.1 percent of U.S. children under 18 years of age were living in families with incomes below the poverty line (U.S. Census Bureau, 2020)
- Updated statistics on ethnic minority poverty rates in the United States (U.S. Census Bureau, 2020)
- Description of a recent research review of a psychological perspective on intergenerational economic mobility, in which it was concluded that the mastery of three developmental tasks for each generation—academic/language skills, self-regulation/mental health, and parent-child relationships—will produce better educational outcomes for both parent and child generations (Sabot & others, 2021)
- New content on what has been labeled “the paradox of aging” because older adults are as happy or happier than younger adults even though their physical health and function are often declining (Li, Lai, & Chappell, 2022)
- Coverage of a recent study that found that at 65 years of age individuals’ happy life expectancy was 25 percent more than their cognitive impairment life expectancy and at age 85 their happy life expectancy doubled to 50 percent greater than their cognitive impairment life expectancy (Bardo & Lynch, 2021)
- Description of recent research indicating that an adult’s biological age was a good predictor of whether they would have a stroke recurrence (Soriano-Tarraga & others, 2021)
- Coverage of recent research that found psychological well-being, as indexed by having a higher purpose in life, positive affect, optimism, social support, and life satisfaction, predicted a lower mortality risk (Boylan, Tompkins, & Krueger, 2022)
- Recent analysis using a number of environmental systems in Bronfenbrenner’s theory to better understand Black American/non-Latino White disparities in maternal and child health (Noursi, Saluja, & Richey, 2021)
- Expanded and updated coverage of sophisticated eye-tracking equipment that is also being used in research on face processing (Johnels & others, 2022), cognitive processing in bilingual children (Enke & others, 2022), language acquisition (Siegelman & others, 2022), and emotional development (Hunnikin & others, 2022)
- Updated *Connecting with Careers* feature on Pamela Trotman Reid, including a \$1 million endowment for psychology students/faculty at Howard University established by Reid and her husband

Chapter 2: Biological Beginnings

- Updated content on how a team of 99 scientists finished the genetic coding of the human genome in 2019 and concluded that it contains 19,969 protein-coding genes (Zimmer, 2021)
- Recent research documenting factors that can influence gene expression, including stress (Parel & Pena, 2022), exercise (Anderson, 2022), nutrition (Bordoni & others, 2022), obesity (Tur & Martinez, 2022), cancer (Hassanzadeh &

others 2022), cardiovascular disease (Constantino & Paneni, 2022), radiation (Sallam & others, 2022), smoking (Kim & others, 2022) and sleep (Carroll & others, 2021)

- Inclusion of recent research indicating that methylation is likely to be involved in hypertension (Chaudhary, 2022), depression (Paoli & others, 2022), cancer (Kresovich & others, 2022), obesity (Mahmoud, 2022), inflammation (Onodera & others, 2022), addictive drugs (Browne & others, 2022), attention deficit hyperactivity disorder (Muller & others, 2022), autism, (Mouat & Lasalle, 2022), and neurodevelopmental disorders (Kaur & others, 2022)
- Updated and new content on the role of susceptibility genes in making people more vulnerable to diseases and disorders such as COVID-19 (Dastar & others, 2022), arthritis (Wu & others, 2022), colorectal cancer (Kim & Bodmer, 2022), cardiovascular disease (Ling & others, 2022), Alzheimer disease (Li & others, 2022) and Parkinson disease (Jiang & others, 2022), as well as the role of longevity genes in making people less vulnerable to certain diseases and more likely to live to an older age (Bin-Jumah & others, 2022)
- Updated and expanded research on the influence of gene-gene interaction in immune system functioning (Shan & others, 2022), obesity (Maculewicz & others, 2022), type 2 diabetes (Molina-Ayala & others, 2022), cancer (Niu & others, 2022), cardiovascular disease (Walsh & others, 2022), arthritis (Xiao, Xiao, & Zhan, 2022), and Alzheimer disease (Wang, Chen, & Shao, 2022)
- Inclusion of a recent analysis that indicated during infancy and childhood, boys with XXY syndrome have expressive and receptive language deficiencies (Samango-Sprouse & others, 2021)
- New content on sickle-cell anemia, including the number of children born worldwide with this disorder and how stem cell transplantation is being explored in the treatment of infants with sickle-cell anemia (Ashorobi & Bhatt, 2022)
- New data indicating that about 1 in 500 Black American babies and 1 in 36,000 Latino babies is affected by sickle-cell anemia (Borhade & Kondamudi, 2021). One in 10 Black Americans and 1 in 20 Latinos are carriers.
- New note indicating that in June 2022, changes in U.S. abortion laws made abortion illegal in some states at various stages of pregnancy
- New critical thinking questions about prenatal identification
- Updated statistics indicating that approximately 10 to 15 percent of couples in the United States and 8 to 12 percent globally experience infertility (Agarwal & others, 2021)
- New summary statement pointing out that the cause of infertility can rest with the woman or the man and can involve genetic and/or environmental influences (Coskun & others, 2022; Niederberger, 2022)
- New analysis indicating that concern has surfaced that the COVID-19 viral infection can attack sperm and might lead to infertility (Aitken, 2021), although this has not been firmly established (Tian & Zhou, 2021)

- Discussion of recent research in which children adopted internationally often have experienced adverse experiences prior to adoption, placing them at risk for problematic socioemotional development (Yarber & others, 2021)
- Description of recent research involving a secure attachment intervention program that improved the socioemotional competence of internationally adopted 3- to 6-year-olds (Lind & others, 2021)
- Coverage of a recent study indicating that 3 years after being adopted from residential care, children showed fewer attachment disorder problems than their counterparts who remained in residential care (Roman, Palacios, & Minnis, 2021)
- Description of a recent United Kingdom study of mainly non-Latino White, well-educated gay father, lesbian mother, and heterosexual families and their adopted young adolescents that found no differences in parent-adolescent relationships and adolescent behavior between the different types of families (McConnachie & others, 2021)
- New note indicating that it's too soon to know whether recent changes in abortion legislation will affect adoption trends
- New *Connecting Through Research* feature, "Outcomes of Children Who Are Adopted in Gay, Lesbian, and Heterosexual Families," describing how research revealed no differences in children and family functioning in these different family structures but rather some process differences in parenting stress and early childhood adjustment (Farr, 2017)
- In closing the coverage of adoption, students are asked to think about what they would do if they were unable to have children but wanted to become parents. Students also are asked to reflect on whether they would want to adopt children or would try in vitro fertilization first.
- Coverage of a recent research review concluding that variations in the 5-HTTLPR gene may contribute to the tendency to ruminate when individuals face life stress (Scaini & others, 2021)
- Discussion of three recent studies indicating that the short version of the 5-HTTLPR gene is linked to greater risk of depression in individuals with coronary heart disease (Zhang & others, 2020), stroke (Wang & others, 2020), and Parkinson disease (Cheng & others, 2020)

Chapter 3: Prenatal Development and Birth

- Discussion of a large-scale study in China in which pregnant women who took folic acid daily significantly reduced the incidence of spina bifida in their offspring (Zhou & others, 2022)
- Inclusion of a recent study revealing that deficient folic acid in mothers during pregnancy was linked to smaller total brain development at 9 to 11 years of age (Zou & others, 2021)
- Coverage of a recent review of 17 meta-analyses that concluded maternal caffeine consumption during pregnancy

was linked to a higher occurrence of miscarriage, stillbirth, low birth weight, and childhood acute leukemia (James, 2021)

- Description of a recent meta-analysis that found higher maternal caffeine intake during pregnancy was associated with childhood overweight and obesity (Jin & Qiao, 2021)
- Inclusion of recent research in which children with FASD had impairments in verbal comprehension, perceptual-motor coordination, processing speed, attention, executive function, and language development (Lange & others, 2021)
- Discussion of recent research that indicated 8- to 13-year-old children with FASD showed impairment in their visual-cortical brain network that could lead to slower cognitive processing (Pervin & others, 2022)
- Description of a recent study linking grand-maternal smoking during pregnancy to ADHD in grandchildren independent of whether their mother smoked in pregnancy (Yim & others, 2022)
- Coverage of recent research in which maternal cigarette smoking during pregnancy was associated with lower academic achievement in offspring at 16 years of age (Kendler & others, 2021)
- Inclusion of a recent study that indicated maternal smoking during pregnancy was associated with depression and generalized anxiety disorder in offspring at 22 years of age (Correa & others, 2022)
- Description of a recent study revealing that maternal exposure to second-hand smoke during prenatal development was associated with ADHD in elementary school (Lin & others, 2021)
- Description of a recent research review indicating that cocaine exposure during prenatal development is associated with reduced birth weight, length, and head circumference (Cestonaro, Menozzi, & Terranova, 2022)
- Coverage of a recent analysis that indicates prenatal marijuana exposure is related to deficient cognitive skills in children (Shukla & Doshi, 2022)
- Discussion of recent research that found offspring of mothers who used marijuana during pregnancy were more likely to be born preterm or at low birth weight (Haight & others, 2021)
- Coverage of recent research indicating that maternal marijuana use during pregnancy is linked to a higher level of psychopathology (internalizing and externalizing problems) and a lower level of gray matter volume in the brain in offspring (Paul & others, 2021)
- Description of a recent study that found marijuana use by pregnant women increased from 6 percent to 11 percent in California following its legalization in that state (Lee & others, 2021)
- Discussion of a recent study revealing that infants with prenatal oxycodone exposure were more likely to be preterm or stillborn (Brogly & others, 2021)
- Commentary that from January through March of 2021, syphilis rates increased by 34 percent in U.S. women

compared with syphilis rates in 2020 (Centers for Disease Control and Prevention, 2022)

- Coverage of a recent research review concluding that maternal diabetes is associated with an increased risk of childhood cancer in offspring, especially leukemia (Yan & others, 2021)
- Description of a recent study in which higher maternal BMI in early pregnancy was associated with overweight and obesity in young adult offspring (Ounjaijean & others, 2021)
- Inclusion of recent research in which pregnancy after 35 years of age was associated with increased risk of diabetes, hypertension, and having a cesarean section (Montori & others, 2021). Also, in this research, pregnancy after age 40 was linked to a higher risk of fetal death, neonatal ICU admission, and postpartum hemorrhage.
- Description of a recent study comparing the health status of newborns whose mothers gave birth at advanced maternal age (35 to 44 years old), very advanced maternal age (more than 45 years old), and age 34 or younger (Smithson & others, 2022). Rates of neonatal intensive care unit admission, Apgar score of <7 at 5 minutes, and neonatal length of stay of >5 days after cesarean delivery were higher for mothers age 45 or older. Birthweights of neonates also were significantly lower if their mothers were 45 or older.
- Discussion of a recent study that revealed a higher level of maternal stress in pregnancy was linked to lower newborn hippocampal volume in the brain and less competent infant socioemotional development across the first year of life (Moog & others, 2021)
- Coverage of recent research that found women who experienced domestic violence during pregnancy were 4.9 times and 5.3 times more likely to suffer from stress and depressive symptoms, respectively, than non-victims of domestic violence (Mahapatro & others, 2022)
- Inclusion of new content on increased risks experienced by pregnant women during the COVID-19 pandemic. During 50 days of quarantine, women showed a gradual increase in psychopathological indicators and a decrease in positive affect (Lopez-Morales & others, 2021), with pregnant women showing a more pronounced increase in depression, anxiety, and negative affect than non-pregnant women did.
- Description of a recent study of low-income, primarily Latina mothers in which maternal depression during pregnancy was linked to children's lower cognitive development, especially among girls, at 5 years of age (Urizar & Munoz, 2022)
- Discussion of a recent study revealing that infants' lower level of a biological index of self-regulation at 7 months postpartum was linked to a higher level of paternal stress in the third trimester of pregnancy (Gao & others, 2021)
- New study revealing that preconception paternal smoking was associated with preterm birth risk (Wang & others, 2022)
- Coverage of recent research that found mothers' perceived stress during pregnancy was elevated when the father was physically and verbally aggressive toward her (Kashanian & others, 2021), and her stress was lower when he was

emotionally and financially supportive and when he participated in prenatal care visits

- New data comparing rates of prenatal care received by Black American mothers (68 percent) and non-Latina White mothers (83 percent) (Centers for Disease Control and Prevention, 2021)
- New *Connecting with Careers* profile featuring midwife Jennifer Nguyen, who works with diverse communities in Canada and strives to reduce inequities in health care in rural and remote areas
- Inclusion of a recent study in which Black American and Latina women reported almost twice as many barriers to prenatal care as non-Latina White women did (Fryer & others, 2021)
- Discussion of a recent research review indicating that women who used waterbirth perceived it to be a positive experience (Feeley, Cooper, & Burns, 2021)
- Description of recent data indicating that in 2018, the U.S. cesarean birth rate peaked at 31.9 percent of all births and continued to remain high in 2020 at 31.8 percent of all births (Hamilton & others, 2021)
- Updated data showing that in 2020 in the United States, 98 percent of births took place in hospitals, 1.26 percent occurred in homes, and 0.74 percent happened in free-standing birth centers (MacDorman, Barnard-Mayers, & Declercq, 2022)
- New data indicating that the percentage of home births rose from 1.03 percent in 2019 to 1.26 percent in 2020 in the United States, an increase of 22 percent and the highest since 1990 (Gregory & others, 2022). In contrast, between 2018 and 2019, prior to the COVID-19 pandemic, there was no change in the percentage of home births. Also, from 2019 to 2020, home births increased from 1.55 to 1.87 percent for non-Latina White women, from 0.50 to 0.68 percent for Black American women, and from 0.37 percent to 0.48 percent for Latina women.
- New discussion of how doulas' close relationships with pregnant women enabled them to become an important source of support during the COVID-19 pandemic (Adams, 2022)
- Coverage of a recent comparison of more than 17,500 each of land births and waterbirths that revealed waterbirth resulted in improved or no difference in most outcome measures (Bovbjerg & others, 2022)
- Description of a recent study using the Neonatal Intensive Care Network Neurobehavioral Scale (NNNS) which revealed that toxic metals measured in placental tissue may adversely affect newborn neurobehavior (Tung & others, 2022)
- Inclusion of recent data indicating that in 2020, 10.1 percent of U.S. infants were born preterm—up from 8 percent in 2007 (Hamilton & others, 2021). The preterm birth rate was 9.1 percent for non-Latino White infants (down from 11.4 percent in 2011); 14.3 percent for Black American infants (down from 16.7 percent in 2011); and 9.8 percent for Latino infants (down from 11.6 percent in 2011).
- Updated statistics on the incidence of low birth weight in the United States, which was 8.3 percent in 2019, a rate that is

considerably higher than that of many other developed countries (Martin, Hamilton, & Osterman, 2021)

- Discussion of a recent study that indicated poverty factors were a likely reason for Black American and non-Latino White disparities in low birth weight outcomes (Loggins Clay, Woodson, & Kersh, 2021)
- New coverage of a recent Japanese study of very low birth weight infants (VLBW) that found 6.2 percent were born with birth defects, with the most common being chromosomal abnormalities, heart defects, and malformation of the digestive system (Kawasaki & others, 2020)
- Inclusion of a recent study that found only 50 percent of extremely low birth weight and preterm infants weighing less than 1.1 pounds at birth survived after admission to intensive care, while 46 percent had moderate to severe disabilities at 5 years of age (Athaly-Jape & others, 2022)
- Description of a recent research review of preterm and low birth weight infants that found those who received maternal kangaroo care for 2 to 6 hours a day gained more weight than those who did not get the care (Charpak, Montealegre-Pomar, & Bohorquez, 2021). However, the weight gain effect disappeared when infants received only 2 hours or less of this care per day.
- Coverage of a longitudinal study in which kangaroo care compared to standard incubator care of preterm infants led to an improved neuroprotective effect (higher volume in different brain regions and better organized white matter) when they were 20 years old (Charpak & others, 2022)
- Coverage of a recent study that found most parents sing to their infants and toddlers on a daily basis (Yan & others, 2021)
- New *Connecting with Careers* profile on Laura Faith Kendall, a music therapist who works with parents and newborns as well as individuals of all ages
- Inclusion of recent research with preterm infants that found those who received massage therapy had a significantly higher daily weight gain and an increase in bone mineral density (Elmoneim & others, 2021)
- Coverage of recent research showing that in the postpartum period, women who engage in light-to-moderate physical activity are less likely to experience poor sleep quality (Matenchuk & Davenport, 2021)
- Discussion of a recent study that analyzed videotaped behavioral interaction data and found that mothers with postpartum depression were prone to inactive maternal behavior, more frequent rejection of their infants, and disengagement of affection towards the infant (Mavrogiogou & others, 2022)

Chapter 4: Physical Development in Infancy

- Updates on recent research by Charles Nelson (a leading expert on infant brain development) and his colleagues, who are exploring topics such as the impact of exposure to early adversities (Bach & others, 2022), autism (Lawrence & others, 2022), face recognition and facial emotion (Bowman & others, 2022), and inhibitory control (Sullivan & others, 2022)

- Description of recent MRI research documenting the role of both the left and right hemispheres in language development in 18- to 27-month-olds (Bosseler & others, 2021) and indicating that the right frontal cortex plays an important role in left-lateralized word learning
- Coverage of MRI research demonstrating that both the right and left hemispheres are involved in the control and processing of emotions (Bajaj & Killgore, 2021)
- Revisions in the discussion of the development of the brain during infancy based on comments by leading experts Charles Nelson and Martha Ann Bell
- Coverage of recent research in which adolescents with a history of institutional care were less likely to be consistently competent than those who were family reared (Guyon-Harris & others, 2021). Among those who were exposed to early institutional rearing, competent functioning from 8 to 16 years was linked to spending less time in institutions and receiving higher-quality caregiving early in life.
- Description of a recent study that found one night of total sleep deprivation impairs molecular clearance of waste from the brain and that sleep on the next several days does not compensate for the lost sleep (Eide & others, 2021)
- Discussion of a recent study that revealed sleep-specific brain activity restores performance by actively refining brain plasticity (Nissen & others, 2021)
- Inclusion of information on the discovery of two recent gene mutations linking SIDS to the occurrence of heart arrhythmias: a cardiac sodium gene (SCN5A) and a cardiac potassium gene (KCNQ1) (Rivaud & Boukens, 2022)
- Updated data indicating that an increasing percentage of U.S. mothers are breast feeding their infants (Centers for Disease Control and Prevention, 2020)
- Inclusion of a recent research review of 42 studies that concluded breast feeding was associated with a lower risk of being overweight at 2 years of age and older, especially if breast feeding continues for 6 months or longer (Dewey & others, 2021)
- New research indicating why Black American mothers tend to have lower rates of breast feeding (Jones & others, 2015)
- Description of a recent research review that was inconclusive as to whether breast feeding reduced cancer in women (Carbrero & Tapero, 2022)
- Discussion of a recent study that discovered longer participation (3 years versus 1 year) in a WIC Special Supplemental Nutrition Program supported children's healthy eating habits (Borger & others, 2022)
- Coverage of a recent analysis that indicated Black immigrant first-time mothers enrolled in the WIC Special Supplemental Nutrition Program had a significantly higher breast feeding initiation rate than did their Black American counterparts (Roess & others, 2022)
- New content indicating that the emergence of COVID-19 in the United States led most states to close or extensively limit their early child-care and education programs (Bauer & others, 2021), affecting many of the 4.6 million low-income young children who receive free meals and snacks through these programs each day
- Inclusion of recent research indicating that fine motor skills at 12 months of age are positively related to communication skills at 2 years of age (Valla & others, 2020)
- Update on the many areas of infant perception in which eye-tracking equipment is being used, including attention (Aktar & others, 2022), face processing (Johnels & others, 2022), cognitive processing in bilingual children (Enke & others, 2022), language acquisition (Siegelman & others, 2022), emotional development (Hunnikin & others, 2022), understanding of others' needs (Koster & others, 2019), and the development of atypical infants such as those with autism (Bagherzadeh-Azbari & others, 2022) and preterm infants (Dean & others, 2021)
- Coverage of a recent study with infants in a NICU that found that gentle human touch during a painful procedure reduced the newborns' pain (Fatollahzade & others, 2022)

Chapter 5: Cognitive Development in Infancy

- Inclusion of a recent study that found infants' attention at 4 months was linked to their working memory at 14 months (Li & others, 2022)
- New content indicating that joint attention especially improves between 9 and 12 months of age (Boyer, Harding, & Bertenthal, 2020)
- Description of a recent study in which joint attention was a key factor linking positive parenting with executive function of infants in low-income families (Brandes-Aitken & others, 2020)
- Discussion of recent research indicating that joint attention is likely to develop more effectively in higher- than in lower-socioeconomic-status (SES) families, possibly because infants in higher-SES families experience more cognitive stimulation, more books, less household chaos, and less stress (Reilly & others, 2021)
- Coverage of recent research indicating that deficits in initiating joint attention at 8 months and responding to joint attention at 12 months were linked to increased risk of autism spectrum disorder at 18 months of age (Montagut-Asuncion & others, 2022)
- Revised and updated content on language development based on feedback from leading expert Virginia Marchman
- Discussion of a recent study in which infants who experienced more gesturing from their parents at age 12 months had a better vocabulary at 36 months (Choi & others, 2021)
- Description of a recent study of 14-month-old infants in which girls produced more types of gestures than boys did (Germain & others, 2022)
- Coverage of a recent study that revealed early pointers (first pointing at 9 months of age) had higher word comprehension at 18 months of age than typical pointers (first pointing at 12 months of age) (Perucchini & others, 2022)
- Inclusion of a recent German study that found 6-month-old infants' vocalizations predicted their expressive vocabulary but not their receptive vocabulary at 12 months of age (Werwach & others, 2021)

- New discussion on how some children experience a vocabulary spurt while others take more of a slow-and-steady course in learning new words
- New content on the variability of when infants and toddlers learn new words as well as when they experience vocabulary spurts (Serrat-Sellabona & others, 2021)
- Description of a recent German study that revealed the mother's cognitive-verbally stimulating parenting behavior at 26 months of age was related to the children's language skills at 38 months of age (Huang & others, 2022)
- Inclusion of recent research in which 15-month-old infants whose mothers had a college education had much better language skills than their counterparts whose mothers did not have a college education, and these differences were still present at 3 years of age (Justice & others, 2020)
- New *Connecting Through Research* feature indicating that early parental communication quality supported the language and literacy success of children from Mexican-American families in low-income environments and that culturally specific dimensions of early parent-child engagement can align with general positive features of joint engagement (Adamson & others, 2021)
- Coverage of a recent research review that concluded child-directed speech occurs less in low SES-families than middle- and high-SES families (Daily & Bergelson, 2022)
- Description of a recent study of 9- to 18-month-old infants in which book sharing resulted in more parent talk, child talk, and interactions than other reading activities (during toy play, personal care, and mealtime, for example) (Clemens & Kegel, 2021)
- Discussion of a recent study of 9- to 15- and 30-month-olds in which parents' language was more frequent, rich, and complex during shared storybook reading than during shared television viewing (Hanson & others, 2021)
- Coverage of recent research in which introducing a mobile app emphasizing shared reading as opposed to screen time to primarily Latino and low-income parents during well-visits to their 6- and 18-month-olds resulted in more frequent shared book reading at 12 months and higher language development scores at 24 months (Hutton & others, 2021)

Chapter 6: Socioemotional Development in Infancy

- New content on the fact that when greater numbers of parents began working at home during the COVID-19 pandemic, fathers probably spent more time interacting with their children than in previous decades
- Coverage of a recent research review which concluded that interventions to increase father involvement, especially in terms of skin-to-skin or tactile stimulation, with their preterm infants in the NICU has positive outcomes for infants' physiological and behavioral outcomes as well as fathers' mental health (Filippa & others, 2021)
- Description of a recent study in which a digital recording device was used to assess daily newborn crying time duration (Cabana & others, 2021). In this study of healthy, full-term newborns, the mean crying time was about 25 minutes per day during the first week, then remained stable for several weeks, followed by an increase to almost 40 minutes per day at five weeks. Prior research on infant crying time was mainly based on parental reporting and suggested that infants cried less than this study indicated.
- Discussion of a recent study that found when parents "let their infants cry it out" in the first six months, this practice was not associated with adverse behavioral development and attachment at 18 months (Bilgin & Wolke, 2020)
- Inclusion of a recent study in which infants who were left to "cry it out" showed highly problematic behavior at 3 months of age but lower rates of problematic behavior at 12 months (Giesbrecht & others, 2020)
- Coverage of a longitudinal study revealing that having a difficult temperament at 2 years of age was linked to susceptibility to psychopathology in adolescence and to depressive symptoms and lower well-being in early adulthood (Wu & others, 2022)
- Discussion of a recent study in which adolescents with higher levels of effortful control were less likely to engage in suicidal ideation, plans, and attempts (Lawson & others, 2022)
- Coverage of recent research indicating that the internal model of attachment plays a pivotal role in the discovery of links between attachment and joint attention (Naghashan & others, 2021)
- Description of a recent study that indicated Latino infants were at higher risk for obesity if they showed avoidant or anxious insecure attachment behavior than if they showed secure attachment (Hepworth & others, 2021)
- Discussion of a longitudinal study in which infant attachment insecurity was linked to less effective emotion-regulation strategies in relationship-challenging contexts 20 to 35 years later (Girme & others, 2021)
- Coverage of a longitudinal study that revealed infants characterized as insecure disorganized at 18 months had brain abnormalities and experienced peer rejection later in childhood (Leblanc & others, 2022)
- New *Connecting Through Research* feature on the importance of developmental cascades research, including a longitudinal study that revealed mother-infant attachment was linked to children's school readiness via executive function and prosocial behavior in the preschool period (Bernier, Beauchamp, & Cimon-Paquet, 2021)
- Coverage of a recent research review concluding that DNA methylation associated with infant attachment may influence the stress regulation system and socioemotional function (Craig & others, 2021)
- Description of a longitudinal study that found a successful transition to motherhood was linked to offspring having better emotion regulation in early childhood and higher life satisfaction in early adolescence (Richter, Bondu, & Trommsdorff, 2022)
- Discussion of recent research indicating that experiencing greater paternal sensitivity at 8 months was linked to lower rates of externalizing problems in the elementary school years (Jacobvitz & others, 2022)

- Inclusion of very recent data from the U.S. Census Bureau's Household Pulse Survey collected in April and May of 2021 revealing that approximately 6.5 million families with children had experienced child care disruptions in the four weeks preceding the survey because of the COVID-19 pandemic (U.S. Census Bureau, 2021), with the most frequent outcome being an adult staying in the household and supervising children while working. Black American and Latino families were the most likely to report that an adult in the household had to take unpaid leave (29.4 percent and 32.9 percent, respectively), while non-Latino White and Asian American families were most likely to report supervising children while working (33.3 percent and 34.7 percent, respectively).

Chapter 7: Physical and Cognitive Development in Early Childhood

- New study of almost 4,000 children in which low family income was linked to children's lower brain volume and cortical thickness (Tomasi & Volkow, 2021)
- Description of a recent study that revealed children from low-SES families had lower prefrontal cortical volume (Dennis, Manza, & Volkow, 2022)
- Inclusion of a recent research review of 3- to 5-year-olds that concluded a higher level of physical activity was associated with better motor development (Veldman & others, 2021)
- Description of a recent study that found pairing preschool children with older adults to engage in exercise together resulted in improved gross motor skills for both the children and the older adults (Minghetti & others, 2021)
- Inclusion of a recent study revealing that child maltreatment was associated with children's insomnia, nightmares, and shorter sleep duration (Schonning & others, 2022)
- Discussion of recent research that indicated excessive screen time was linked to later sleep onset and shorter sleep duration in preschool children (Hiltunin & others, 2021)
- Coverage of a recent study that revealed having nightmares at 24 months and restless sleep at 48 months were linked to ADHD at 11 years of age (Carpena & others, 2020)
- Update describing significantly increased rates of overweight and obesity for children and adolescents during the COVID-19 pandemic, with 22 percent of 2- to 19-year-olds classified as overweight in 2021, up from 19 percent in 2020 (Centers for Disease Control and Prevention, 2021)
- Inclusion of a recent study of low-income Latina mothers and their children that revealed the children had a higher future obesity risk when their mothers ignored the children's fullness cues and pressured them to eat (Power, & others, 2021)
- Description of a recent study in which the 5-2-1-0 program was effective in reducing children's body mass index (BMI), increasing their daily consumption of fruits and vegetables, reducing screen time, increasing their daily physical activity, and reducing their daily consumption of sugary beverages (Le Jenkins & others, 2020)
- Discussion of a recent study in which more than one hour of screen time at 2 years of age was linked to an increased risk of obesity at 4.5 years of age (Malihi & others, 2021)
- New content indicating that the emergence of COVID-19 in the United States led most states to close or extensively limit their early child-care and education programs (Bauer & others, 2021), affecting many of the 4.6 million low-income young children who receive free meals and snacks from these programs each day
- Updated data indicating that in 2018 in the United States, the leading causes of death in infants were congenital malformations, low birth weight, maternal complications, SIDS, and accidental (unintentional) injuries (Centers for Disease Control and Prevention, 2021)
- New content noting that the infant mortality rate of Black American infants was 2.3 times the rate of non-Latino White infants (Centers for Disease Control and Prevention, 2021)
- New data indicating that in 2019, the leading causes of death in children 1 to 4 years of age were accidents, congenital malformations, deformations and chromosomal abnormalities, and cancer (National Vital Statistics System, 2021)
- Discussion of recent research that indicated environmental smoking exposure in the home was associated with tuberculosis in children (Altet & others, 2022)
- Inclusion of a recent study that found cumulative exposure to tobacco smoke was linked to children's increased risk for hospital admissions (Merianos & others, 2022)
- Coverage of a recent study of young children in which family members smoking inside the housing unit was associated with receptive and expressive language difficulties in male children (Jackson & Testa, 2021)
- New *Connecting Through Research* feature on how low-income preschool-aged children's ability to selectively focus and sustain their attention served as a strong predictor of early math reasoning and early literacy skills in both fall and spring assessments (Shannon, Scerif, & Raver, 2021)
- Description of a study that indicated autonomy-supportive parenting, especially giving children choices, was associated with better executive function in early childhood (Castelo & others, 2022)
- Inclusion of a recent study that found positive sleep development in preschool predicted better executive function in elementary school (Bernier, Cimon-Paquet, & Tetresault, 2021)
- Discussion of a recent cross-cultural study in which executive function levels of children in Hong Kong and mainland China were higher than those of children in Great Britain (Xu & others, 2020)
- Description of a recent study in which fast mapping was documented as early as 24 months of age in remembering novel object names after a single learning event (Remon & others, 2020)
- Inclusion of a recent comparison of 38 developed countries by the OECD (2021) that found participation of U.S. 3- to 5-year-olds in early childhood education was below the average of the 38 countries
- Updated data indicating that there were 5,000 Montessori schools in the United States in 2021 and approximately 20,000 worldwide in 2016 (National Center for Montessori in the Public Sector, 2021)

- New content in which an expert on young children's development and education, Angeline Lillard (2021), argued that Montessori is a very positive alternative to other early childhood programs and is especially effective in resolving the dichotomy between work and play
- Inclusion of updated data indicating that for a number of years, Head Start served approximately 1 million children 5 years of age and younger per year, although that number dropped to 755,000 in 2021 because of the COVID-19 pandemic (KIDS COUNT, 2022)
- New *Connecting with Careers* feature on Rakaya Humphreys, Director of Head Start for the Northwest Tennessee Economic Development Council, who also benefitted from Head Start services as a young mother
- Updated data indicating that in 2020, 44 states had some form of public-funded preschools (Friedman-Krauss & others, 2021), but only four states (New Jersey, North Carolina, Oklahoma, and West Virginia) were spending enough to pay for high-quality full-day preschools
- New content indicating that due to issues such as health risks, closed classrooms, and remote pre-K, the 2020–21 school year—the first to be fully affected by the COVID-19 pandemic—saw nearly 300,000 fewer children enrolled in state-funded preschool programs, representing the first decline in enrollment in 20 years
- Inclusion of a recent study of 7- to 9-year-olds in which indulgent parenting was associated with increased body mass index (BMI) (Hughes & others, 2021)
- Updated data indicating that physical punishment was outlawed in 59 countries in 2020 (up from 34 in 2012), with a number of countries increasing the ban on physical punishment mainly to promote children's rights to protection from abuse and exploitation (Global Initiative to End All Corporal Punishment of Children, 2020)
- New main section "COVID-19 Effects on Parenting and Nurturing Children"
- Updated data indicating that in 2019, approximately 656,000 U.S. children were victims of child abuse at least once during that year (Administration on Children and Families, 2021)
- Coverage of a recent study indicating that young children who were physically abused during their first five years of life were more likely to later receive special education services, repeat a grade in school, have been convicted of a crime in the past year, and have worse physical health compared with young children who were not physically abused during their first five years of life (Lansford & others, 2021)
- Inclusion of a recent research review concluding that childhood sexual abuse is linked to an increased incidence of mental health disorders (including posttraumatic stress disorder, mood and anxiety disorders) as well as substance use disorders (Noll, 2021)
- Discussion of a recent study that revealed mothers who had experienced child maltreatment from their parents were more likely to engage in maltreatment of their offspring, which in turn predicted greater internalizing and externalizing symptoms in middle and late childhood (Rusotti & others, 2021)
- Coverage of a longitudinal study tracking individuals from 2 to 24 years of age that found child maltreatment disrupted emotional development and resulted in difficulties identifying emotions and coping with emotional distress (Warmington & others, 2022)
- New *Connecting with Careers* profile featuring Allison Tomlinson, a college professor and marriage and family therapist who specializes in providing trauma therapy intervention to children in non-traditional family compositions, such as foster care and adoption
- Description of a Pew Research Center study (2019) of 130 countries and territories that indicated the United States has the world's highest percentage of children living in single-parent households.
- Coverage of a recent study in which adolescents' emotional and behavioral problems increased after their parents divorced, not before (Tullius & others, 2021)
- Discussion of a 15-year follow-up longitudinal study in which divorced families were given a parenting improvement program that resulted in reducing externalizing problems and improving academic outcomes (Wolchik & others, 2021)
- Inclusion of a recent study that revealed the quality of family relationships was the most important factor in predicting child well-being in sole and joint custody families (Steinbach & Augustijn, 2022)

Chapter 8: Socioemotional Development in Early Childhood

- Description of a recent study revealing that preschool children who attended child care displayed more anger and aggression than those who did not (Salemi & Caprin, 2022)
- Coverage of a recent study of young children in which a lower level of maternal depression and a higher level of children's executive control predicted a higher level of children's emotion knowledge (Thompson & others, 2020)
- Discussion of a recent study that indicated children's emotion regulation (their ability to manage feelings of sadness and worry) served as a buffer against internalizing symptoms associated with peer victimization (Cooley & others, 2022)
- New *Connecting Through Research* feature revealing that the intervention training program "Tune in to Kids" increased the mothers' use of emotion coaching and decreased their emotion dismissing with their young children (Qiu & Shum, 2021), providing the first evidence of the effectiveness of an emotion-coaching program in a non-Western culture (China)
- New summary of a number of supportive and unsupportive caregiver emotion socialization strategies with young children based on research across the last two decades (Spinrad, Morris, & Luthar, 2020)
- Updated definitions of gender, gender roles, and gender-typing
- Description of a recent Chinese study revealing that authoritative parenting increased children's favorable trajectories of math achievement (Wang, Chen, & Gong, 2021)
- Coverage of recent research indicating that authoritative parenting was linked to reducing adolescent screen time (Xu, 2021)

- Coverage of a recent analysis that concluded in order to encourage child protection and better child custody decision-making, three key attachment principles should be considered: (1) the child's need for familiar, non-abusive caregivers; (2) the value of continuity in good-enough care; and (3) the benefits of networks of positive attachment relationships (Forslund & others, 2022)
- Updated data that revealed in 2019, 16.1 percent of same-gender couples had children in their household, with 24 percent of these being female-female couples and 7.2 percent male-male couples (Statista, 2021)
- Updated data that indicated in 2020, 50 percent of children 18 years of age and younger were non-Latino White; by 2050, this figure is projected to decrease to 39 percent, while 31 percent will be Latino, 14 percent will be Black American, and 7 percent will be Asian American (Childstats.gov, 2021)
- Coverage of a recent review of research involving 3- to 19-year-old U.S. children and adolescents that concluded those living in lower socioeconomic settings were more likely to have higher levels of psychopathology (Peverill & others, 2021)
- New content on how some children with low-SES backgrounds are competent and perform well in school; some children also perform better than many middle-SES and high-SES students
- Coverage of a recent study of children 4.8 years old that revealed higher peer competence benefited their academic performance (Wagner & others, 2021)
- Inclusion of a study that found in both the United States and China, parents' peer restriction predicted a decrease in children's adjustment over time (Xiong & others, 2020)
- Coverage of a recent study in which preschool children who engaged in excessive screen time had more problems involving conduct and peer relations (Tezol & others, 2022)
- Description of a recent study of Japanese elementary school students that revealed longer screen time duration was linked with increased obesity, decreased physical activity, and lower academic performance (Mineshita & others, 2021)
- Discussion of a recent Dutch study that indicated children were less physically active and screen time was much higher during and after school closures due to the COVID-19 pandemic lockdown (Ten Velde & others, 2021)
- Discussion of a recent study of 10- to 11-year-olds in which a school-based physical activity intervention increased the children's self-reported psychological well-being and relations with peers (Kvalo & Natlandsmyr, 2021)
- Coverage of a recent study of fourth-graders in which cardio-respiratory fitness not only was linked to improved attentional skills, including concentration, but also to psychological well-being (Chen & others, 2022)
- New main section on "Health Disparities in Children Living in Poverty and Children of Color" (Dembo & others, 2022)
- Inclusion of recent data on the higher incidence of health problems in various ethnic minority groups (Tsenoli & others, 2022)
- New *Connecting with Careers* profile on Ariana Lorenzo, a Child Life Specialist
- Description of recent data indicating that in 2017–2020, 26.2 percent of Latino children, 24.8 percent of Black American children, 12.1 percent of non-Latino White children, and 9 percent of Asian American children were obese (Stierman, Afful, & Carroll, 2021)
- Coverage of how the COVID-19 pandemic has disproportionately affected children living in poverty conditions and children of color, as well as children who are vulnerable due to their living situations or underlying health conditions (Ang & others, 2022)
- Description of a recent study of 5- to 17-year-olds in southern California in which the greatest increase in being overweight during the COVID-19 pandemic occurred in 5- to 11-year-old children (Woolford & others, 2021)
- Inclusion of a recent large-scale Chinese study that revealed obese children were more than twice as likely to have hypertension than normal-weight children (Chen & others, 2021)
- Discussion of a recent intervention with 2- to 19-year-olds in the Supplemental Nutrition Assistance Program (a program for children who are at higher risk of poor diet) that revealed restricting purchases of sugar-sweetened beverages promoted a healthier diet and reduced their obesity risk (Choi, Wright, & Bleich, 2021)
- Coverage of a recent study that revealed children (mean age of 10 years old) with elevated blood pressure had a number of obesity-related characteristics such as high BMI and fat mass (Abu Ejheisheh & others, 2021)
- Updated data on the percentage of students with different disabilities who participated in special education in 2019–2020 (National Center for Health Statistics, 2021)
- Inclusion of a recent research review indicating that ADHD in many adolescents persisted into adulthood (mean rate of 43 percent) and was often associated with substance misuse and antisocial behavior (Di Lorenzo & others, 2021)
- Coverage of a recent study that revealed physical exercise can reduce children's ADHD symptoms by improving their attention, executive function, and motor skills (Sun & others, 2022)
- Description of a 2018 survey in which the estimated proportion of children with autism spectrum disorders had increased to 1 in 44 (Centers for Disease Control and Prevention, 2021)

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

- Coverage of a recent study in which children who engaged in regular exercise had lower rates of internalizing and externalizing problems (Tandon & others, 2021)
- Inclusion of a recent research review of 27 studies that concluded aerobic exercise is associated with children's reduction of body fat, lower fasting insulin, decreased inflammatory markers, and increased physical fitness (Lee, 2021)
- Description of a recent research review that concluded physical activity interventions improve the cognitive performance (especially executive function) of overweight or obese children (Sun & others, 2021)

- Discussion of a recent survey in which autism spectrum disorders were identified three times more often in boys than in girls (Centers for Disease Control and Prevention, 2021)
- Inclusion of a recent study of 7- to 8-year-olds that found having better working memory increased new word learning (Gray & others, 2022)
- Description of a recent German study in which superior metacognition increased the development of school achievement in gifted sixth- to eighth-grade students over and above intelligence (Tibken & others, 2022)
- New *Connecting Through Research* feature describing a recent longitudinal study that found metacognitive knowledge predicted the reading and writing performance of children from the first to sixth grades (Teng & Zhang, 2021)
- Coverage of a recent analysis across a number of countries in which bilingual children consistently demonstrated better executive function than monolingual children (Schirmbeck, Rao, & Maehler, 2020)
- Inclusion of a recent study conducted by Virginia Marchman and her colleagues (2020) in which stronger Spanish language skills at 2 years of age were linked to better English language skills as well as maintenance of good language skills at 4½ years of age, indicating that families who primarily speak Spanish should engage in activities that develop children's competence in Spanish while also encouraging opportunities to learn English
- Coverage of a recent study that revealed children with better self-regulation were less likely to have internalizing and externalizing problems (Lawler & others, 2022)
- Description of a longitudinal study tracking individuals from birth to 45 years of age that found those who had better self-control in childhood experienced slower bodily aging in adulthood and fewer signs of aging in their brains (Richmond-Raker & others, 2021), and by middle age, these individuals were better equipped to handle later-life health, financial, and social demands
- New content describing how parents can help their children develop self-control (Gottman, 2022)
- New content on efforts by Suniya Luthar and her colleagues (2021, 2022) to develop authentic connections groups in communities to provide support to families in highly stressful circumstances, such as the COVID-19 pandemic, and to increase families' resilience
- Revised description of Kohlberg's three levels of moral development
- Inclusion of a recent meta-analysis in which children evaluated moral rules as more generalizable and inalterable than conventional rules (Yoo & Smetana, 2022), and children viewed moral transgressions as more unacceptable and more deserving of punishment than conventional transgressions
- Coverage of a meta-analysis of 55 studies involving individuals from childhood through emerging adulthood that concluded engaging in higher levels of prosocial behavior was related to lower levels of internalizing and externalizing problems (Memmott-Elison & others, 2020)
- Discussion of a recent study that revealed harsh parenting was linked to a lower level of children's prosocial behavior (Bevilacqua & others, 2021)
- Description of a recent study in which maternal warmth was associated with a higher level of children's prosocial behavior (Kanacri & others, 2021)
- New content explaining that commitment to a moral identity involves behaving in a moral way, while engaging in moral disengagement shields an individual from thinking that he or she has done something immoral or wrong (Lapsley, LaPorte, & Kelley, 2022)
- Inclusion of recent research indicating that bullies frequently use moral disengagement strategies (Travlos & others, 2021)
- New content on how the brains of boys/men have more intrahemisphere connectivity, while the brains of girls/women have more interhemisphere connectivity (Grabowska, 2020)
- Update on how as students move from grades four to twelve, gender differences in reading and writing skills increase (Reilly, Neumann, & Andrews, 2019)
- Discussion of a recent study that found girls expressed more emotional concern for others than boys did (Trentini & others, 2022)
- Description of a recent study that revealed girls had much better self-regulation than boys did (van Tetering & others, 2020)
- Coverage of a recent study of more than 30,000 U.S. high school students which found that 20 percent had experienced school bullying and 15 percent had experienced cyberbullying

Chapter 10: Socioemotional Development in Middle and Late Childhood

- Coverage of recent research that confirmed perspective taking underlies children's prosocial actions and that their spontaneous capacity to take others' perspectives develops in the early elementary school years (Sobel & Blankenship, 2021)
- Inclusion of recent research indicating that children and adolescents who do not have good perspective-taking skills are reluctant to give to others (van de Groep, Zanolie, & Crone, 2020)
- New discussion of how low self-esteem has been implicated in overweight and obesity (Gong & others, 2022), anxiety and depression (Sahlan & others, 2021), suicide (Reid-Russell & others, 2021), and delinquency (Gauthier-Duchesne, Hebert, & Blais, 2021)
- Description of a recent research review that concluded there is good research evidence that high self-esteem has adaptive consequences for social relationships, school, work, mental health, physical health, and antisocial behavior (Orth & Robins, 2022)
- Coverage of a longitudinal study that found a reciprocal relation between self-esteem and achievement in Mexican-origin youth (Zheng & others, 2020)
- Discussion of a recent study of 4-year-olds in which better self-regulation predicted their math and literacy pre-academic skills (Konucu & others, 2022)
- Description of a longitudinal study that recently discovered that children with better self-control were more likely to graduate from high school on time and attend college (Johnston & others, 2022)

(Webb & others, 2021). Sexual minority youth were more likely to report both types of bullying victimization than their heterosexual peers, while Black American and Latino adolescents were less likely to report both types of victimization. And non-Latino White gay/lesbian or bisexual youth reported more bullying victimization than non-Latino White heterosexual youth.

- Inclusion of a longitudinal study that revealed after being bullied, bullying victims' self-esteem decreased and this reduction in self-esteem was linked to further victimization (Choi & Park, 2021)
- Discussion of a recent Chinese study of adults 60 years of age and older that found those who had been the victims of bullying in childhood had more severe depressive symptoms than their counterparts who had not experienced bullying victimization as children (Hu, 2021)
- Description of a recent study in which friends' social support was linked to greater engagement in physical activity during adolescence (Lisboa & others, 2021)
- Inclusion of a recent experimental study of almost 1,900 middle school students that found enhancements to peer relations created by structured small-group learning (cooperative learning, for example) improved peer relations, reduced stress, decreased emotional problems, and promoted academic achievement (Van Ryzin & Roseth, 2021)
- Update on how the U.S. government suspended standardized testing during the 2020–2021 school year when the vast majority of schools switched from in-person classes to online learning in an effort to protect students and staff from COVID-19
- New main section on “Schools and the COVID-19 Pandemic” that includes content on how many students struggled with online learning (U.S. Agency for International Development, 2022)
- Coverage of a recent analysis in which 14,000 students were assessed in the spring of 2020 to evaluate their mental health and learning following the emergence of the COVID-19 pandemic (Authentic Connections, 2021). Students of color were found to be at greater risk for mental health and learning difficulties than non-Latino White students. Specific difficulties encountered by various ethnic groups also are described.
- Updated data on international comparisons of students' achievement in which a 2019 assessment of fourth- and eighth-grade students indicated that U.S. students placed fifteenth out of 56 countries in fourth-grade math and eighth out of 55 countries in fourth-grade science (TIMSS, 2019)
- Inclusion of recent research with 11- to 15-year-olds that revealed their belief that intelligence is malleable and capable of growth over time only predicted higher math engagement among students if they also had metacognitive skills to reflect on and be aware of the learning process (Wang & others, 2021)
- Description of recent research indicating that while some students have the ability to develop growth mindsets on their own, recent research by Carol Dweck and her colleagues (Yeager & others, 2022) found that sustaining growth mindset effects may require contextual effects, such as their teachers also having a growth mindset, to take root and flourish

Chapter 11: Physical and Cognitive Development in Adolescence

- Updates based on comments by leading expert John Schulenberg
- Coverage of a recent study in Taiwan that revealed the rate of decline in the average age at menarche was 0.43 years per decade in the last 30 years (Chow & others, 2020)
- Inclusion of a recent study that revealed prepubertal internalizing symptoms, such as depression, were linked to earlier pubertal onset in girls (Knight & others, 2021)
- Discussion of a recent study in which prenatal exposure to maternal stressful life events was associated with earlier pubertal onset in girls (Brauner & others, 2021)
- Description of a recent Italian study that early puberty occurred more often for girls after the onset of the COVID-19 pandemic than prior to its occurrence (Verzani & others, 2021)
- Coverage of a recent study of 11- to 14-year-olds in which those who had a negative body image because of social media had higher rates of depressive symptoms and online social anxiety, found it harder to make new friends, and were more socially isolated (Charmaraman & others, 2021)
- Inclusion of a recent meta-analysis that concluded early-maturing boys and girls are more physically fit than their peers (Albaladegio-Saura & others, 2021)
- Discussion of a recent study that found early-maturing boys were more physically fit than their peers but girls who matured on time were more physically fit than their early- or late-maturing counterparts (Nevill & others, 2021)
- Description of recent research indicating that the corpus callosum continues to thicken well into the third decade of life (Danielsen & others, 2020)
- Coverage of a recent research review that concluded an increase in integrative brain processes continues until 40 years of age (Edde & others, 2021)
- Inclusion of a recent research review that indicated higher childhood SES is associated with more efficient brain networks in adulthood (Tooley, Bassett, & Mackey, 2021)
- Updated data revealing that in 2019, 56.7 percent of twelfth-graders reported ever having had sexual intercourse (Underwood & others, 2020)
- Updated statistics on the probability of having sexual intercourse in the United States by age 20 (77 percent for boys; 79 percent for girls) (Martinez & Abma, 2020)
- Updated data indicating that for ninth- to twelfth-graders in 2019, 42.3 percent of Black Americans, 42.3 percent of Latinos, 38 percent of non-Latino Whites, and 15.6 percent of Asian Americans said they had experienced sexual intercourse (Underwood & others, 2020)
- New *Connecting with Careers* feature on Terrance Weeden, a pediatrician who is also a vocal advocate for LGBTQ youth
- Coverage of a recent study of Black American families in which family stress, such as economic stress and maternal psychological distress in single-family households, was linked to engagement in risky sex by adolescents (Brown, Simons, & Gibbons, 2021)

- Description of a recent study that found lower parental monitoring and school bonding were linked to engaging in earlier sexual risk-taking (Gottfredson & others, 2022)
- Inclusion of a recent study that revealed associating with antisocial peers predicted early engagement in sexual intercourse (Clark & others, 2021)
- Inclusion of a recent national study that found a substantial increase in the use of contraceptives by U.S. high school students the last time they had intercourse (54.4 percent in 2019 versus 46 percent in 1991; down from 60 percent in 2011) (Szucs & others, 2020)
- Discussion of recent research in which adolescent boys were more likely than adolescent girls to report condom use at last intercourse and consistent condom use in the last 12 months (Lindberg, Firestein, & Beavin, 2021)
- Updated data that found in 2020, the U.S. birth rate among 15- to 19-year-olds was 15.4 births per 1,000 females, the lowest rate ever recorded and less than half the rate in 2008 (41.5 births per 1,000 females) (Martin & others, 2022)
- Updated data indicating that in 2020, ethnic variations still characterized adolescent pregnancy, but rates are declining significantly among all ethnic groups (Martin & others, 2022)
- Description of a recent Canadian study that revealed 32.9 percent of adolescent pregnancies were rapid repeat pregnancies with the second pregnancy occurring within 33 months of the first (Ramage & others, 2021)
- New content on the impact of the COVID-19 pandemic in diminishing adolescents' use of health care (Goldman & others, 2021)
- New coverage of the especially high firearm homicide rate in Black American adolescent boys and emerging adult men and how the rate has recently increased (Centers for Disease Control and Prevention, 2022)
- Inclusion of a recent study of 15-year-olds that found adolescents who consistently lived in poor neighborhoods had the highest levels of poverty and anxiety (King & others, 2022). Adolescents who previously lived in poor neighborhoods but were able to exit them later showed no difference in depression and anxiety compared with adolescents who never lived in poor neighborhoods. All of these findings were more pronounced in girls than in boys.
- New coverage of disparities in adolescent health status related to poverty and ethnicity, especially in Black American and Latino families, caused by the COVID-19 pandemic (Heard-Garris & others, 2021)
- Description of a recent study of adolescents that found increased caffeine consumption, especially afternoon and evening use, was linked to later sleep onset, reduced total sleep time, and diminished sleep efficiency (Lunsford-Avery & others, 2022)
- Inclusion of national data indicating that the percentage of U.S. 12- to 19-year-olds who were obese increased from 12 percent for boys and 10.2 percent for girls in 1994 to 21.7 percent for boys and 19.6 percent for girls through 2018 (Forum on Child and Family Statistics, 2021)
- Description of national data that found U.S. high school students showed a linear decrease in their intake of fruits and vegetables since 1999, with 59.2 percent of high school students not eating vegetables one or more times in the last seven days in 2019 (Underwood & others, 2020)
- Discussion of a recent national survey that revealed in 2019, 23 percent of ninth- through twelfth-graders had engaged in physical activity for 60 minutes or more in each of the last seven days, compared with 28.7 percent in 2011 (Underwood & others, 2020)
- Coverage of a recent national survey in which adolescent girls were much less likely to engage in physical activity for 60 minutes or more per day in each of the last seven days (15.4 percent) than were boys (30.9 percent) (Underwood & others, 2020)
- Inclusion of a recent research review of 27 studies that concluded aerobic exercise was associated with adolescents' reduced body fat, lower fasting insulin, decreased inflammatory markers, and increased physical fitness (Lee, 2022)
- Discussion of a recent study in which adolescents who exercised more per week had better processing speed, selective attention, and concentration (Reigal & others, 2020)
- Inclusion of a recent study of 14-year-olds that revealed replacing at least some screen time with exercise reduced their emotional distress, but the largest reduction in emotional distress occurred when time spent in television watching and social media was replaced with participation in team sports
- Description of a recent study of 10- to 14-year-olds that found being physically inactive was associated with being a girl, not having sports facilities in the neighborhood, and not perceiving the neighborhood as a safe place (Judice & others, 2021)
- Coverage of a recent large-scale study conducted in the United States, United Kingdom, and the Netherlands in which 51.5 percent of adolescents reported getting less than 8 hours of total sleep time and 18 percent indicated that they experienced daytime sleepiness (Kocevska & others, 2021)
- Inclusion of a recent research review of 112 studies that concluded more physical activity and positive social relationships improved college students' sleep quality, while greater caffeine intake, higher stress levels, and irregular sleep-wake patterns decreased their sleep quality (Wang & Biro, 2021)
- Discussion of a recent study in which nearly half of all adolescent marijuana users reported driving after using the drug in the last 30 days, with the highest prevalence among heavy users (Hammig, Davis, & Jones, 2021)
- New statistics from the Monitoring the Future survey indicating that the percentage of adolescents reporting substance use decreased significantly in 2021 (Miech & others, 2022), the largest one-year decrease in overall illicit drug use reported since the survey began in 1975
- New commentary on why there was a significant decline in adolescent drug use during the COVID-19 pandemic, with potential pivotal reasons possibly involving drug availability, family involvement, differences in peer connections and peer pressure, or other factors (Miech & others, 2022)
- Updated national data on the remarkable decline in 2021 of adolescents' use of alcohol, nicotine, and marijuana (Miech & others, 2022)

- Coverage of a recent study in which both parent-adolescent relationships and deviant peer affiliations were linked to adolescent substance use, but deviant peer affiliations had a stronger effect on adolescents' use of multiple drugs (Greenwood & others, 2021)
- Inclusion of a recent study in which students in the first year of middle school had lower levels of adaptive coping and higher levels of maladaptive coping compared with students in elementary school, (Skinner & Saxton, 2020)
- Updated data on the continuing decline in school dropout rates overall and separately for Black American, Latino, Asian American, and non-Latino White adolescents. In 2020, the dropout rate for Black American adolescents (4.2 percent) was lower than for non-Latino White adolescents (4.8 percent) for the first time (National Center for Education Statistics, 2022)
- Discussion of recent research in which the more time adolescents spent with same-age friends, romantic partners, or siblings who had recently quit school, the greater their likelihood of dropping out of school themselves (Dupere & others, 2021)
- New content indicating that 90 percent of participants in the "I Have a Dream" program graduate from high school, compared with an overall rate of 74 percent of students from low-income backgrounds ("I Have a Dream" Foundation, 2022)

Chapter 12: Socioemotional Development in Adolescence

- Coverage of a recent meta-analysis of longitudinal studies tracking individuals from 5 to 28 years of age supporting the view of self-evaluations being domain-specific in that self-esteem was positive in the domains of academic abilities, social acceptance, and romantic relationships but were negative in the areas of morality, mathematics, and verbal abilities (Orth & others, 2021)
- New content on the increasing number of researchers who have described different types of narcissism (Donnellan, Ackerman, & Wright, 2021), with one of the most common distinctions being the difference between vulnerable and grandiose narcissism
- Inclusion of a recent study that found regardless of neighborhood context and socioeconomic advantage or disadvantage, adolescents' self-regulation predicted academic achievement (Davisson, Hoyle, and Andrade, 2021)
- Coverage of a recent Chinese study that revealed adolescent self-control was associated with physical and mental health in adulthood (Yang & Jiang, 2022)
- Description of a recent research review that found consistent improvement in self-regulation for curriculum-based interventions, mindfulness and yoga interventions, exercise interventions, and social and personal skills interventions (Pandey & others, 2018), with positive outcomes indicated for academic achievement, substance abuse, conduct disorders, social skills, and depression
- Discussion of a recent study using the narrative approach that found bidirectional links between identity confusion and

depression, anxiety, and eating disorder symptoms (Potterton & others, 2022)

- Description of a 10-year longitudinal study conducted from early adolescence (age 13) into emerging adulthood (age 24) that confirmed the existence of a dual-cycle identity formation process (Becht & others, 2021)
- Discussion of a recent study of Latino emerging adults in which the bicultural harmony component of bicultural identity development was linked to lower levels of psychological stress (Cano & others, 2021)
- Coverage of a recent study of Latino youth that showed enhanced resilience against discrimination encounters when they had more family ethnic socialization experiences and engaged in greater ethnic identity exploration and resolution (Martinez-Fuentes, Jager, & Umaña-Taylor, 2021)
- Discussion of research by Adriana Umaña-Taylor and her colleagues (Safa & Umaña-Taylor, 2021; Umaña-Taylor & Drake, 2022) in which a positive ethnic identity is related to positive outcomes for ethnic minority adolescents
- New *Connecting with Careers* profile on Adriana Umaña-Taylor, a professor and researcher of ethnic-racial identities who studies immigrant families in the United States
- Inclusion of a recent study involving individuals from 12 to 34 years of age in which attendance at religious services declined with age, yet endorsement of the importance of religion increased and endorsement of the importance of prayer remained stable over time (Dew, Fuemmeler, & Koenig, 2020)
- Discussion of cross-cultural variations in adolescent religiosity (Jensen, 2021)
- Description of a study that revealed adolescents with a low level of parental monitoring engage in less effective executive functioning (Sangaawi, Adams, & Reissland, 2021)
- Coverage of recent research in which lower parental monitoring was linked to adolescents' greater use of alcohol and tobacco (Mills & others, 2021)
- Description of a recent German study that found a supportive autonomy parenting profile was linked to adolescents' positive academic and psychological development whereas a controlling autonomy parenting profile was associated with increased likelihood of psychopathology and impaired academic achievement (Teuber & others, 2022)
- Inclusion of a recent study of Lebanese adolescents that revealed those who were securely attached had lower rates of addiction to alcohol and cigarettes than their insecurely attached counterparts (Nakhoul & others, 2020)
- Discussion of a recent study that indicated insecure attachment was associated with depression and suicidal ideation in adolescents (Fattouh & others, 2022)
- Description of recent research with 8- to 15-year-olds that revealed high peer support at school was especially important in predicting mental health and well-being (Butler & others, 2022)
- Coverage of a recent research review of 19 studies that concluded secure attachment with parents in adolescence predicted positive relationships with peers and friends based on communication, support, intimacy, and trust (Delgado & others, 2022)

- Inclusion of recent research that found improved peer acceptance, dependability, and ease of making new friends were linked to a reduction in adolescents' depressive symptoms (Adedeji & others, 2022)
- Coverage of recent research in which adolescent peer struggles were linked to accelerated epigenetic aging at 30 years of age (Allen & others, 2022b). The epigenetic age measure consisted of combining DNA markers for physiological risk and stress factors associated with increased mortality and morbidity.
- New content on changes related to the COVID-19 pandemic, including its negative impact on adolescent peer relations (Orben, Tomova, & Blakemore, 2021)
- Inclusion of a recent study in which adolescent close friendship quality was a better predictor of adult peer and romantic outcomes, work performance, and depressive symptoms than parental reports of the parent-teen relationship (Allen & others, 2022b)
- Discussion of a recent study in which friends' use of nicotine and marijuana was linked to adolescents' use of these drugs (Herold & others, 2021)
- Description of a longitudinal study in which continuous singles (individuals who never dated from 10 to 20 years of age) reported lower life satisfaction in adolescence and early adulthood than moderate daters (Gonzales Aviles, Finn, & Neyer, 2021)
- Extensive expansion and updating of content on socioeconomic status and poverty (van Zweiten & others, 2021)
- Coverage of a recent research review of adolescents that concluded low SES is associated with lower volume and surface area of the brain's frontal lobes, amygdala, and hippocampus (Rakesh & Whittle, 2021)
- Inclusion of a recent study in which lower SES assessed in early adolescence was linked to lower cognitive control and higher risk-taking in late adolescence (Brieant & others, 2021)
- Discussion of a recent meta-analysis that concluded low SES is a meaningful contributor to the development of lower cognitive ability and achievement (Korous & others, 2022)
- Update on research by Suniya Luthar and her colleagues (Luthar, Ebbert, & Kumar, 2021) focusing on ways that adolescents in high-achieving environments can be more resilient to the risks involved, such as parents placing less academic pressure on their adolescents and emphasizing that a balanced perspective on achievement also matters greatly
- Extensive expansion and updating of content on adolescent ethnicity, including an emphasis on adolescence and emerging adulthood as special junctures for ethnic identity development (Umaña-Taylor & Rivas-Drake, 2022)
- Description of a recent study of undocumented Guatemalan immigrant adolescents that found loneliness, social isolation, and work conditions were linked to depressive symptoms (Chavez, Gonzales-Backen, & Grzyacz, 2021)
- New section on "Racism and Discrimination"
- Coverage of recent research indicating that while Asian American adolescents had less anxiety and school isolation than non-Latino White adolescents, they experienced significantly more discrimination (Luthar, Ebbert, & Kumar, 2021)
- Description of research in which students showed positive adjustment when they perceived their teachers to be supportive and understanding during the first three months of distance learning associated with the COVID-19 pandemic (Luthar, Pao, & Kumar, 2021)
- Inclusion of content on indigenous people having a long history of experiencing discrimination and racism that has received inadequate attention (NETWORK, 2021)
- New content on the "Intentional Parenting for Equity and Justice" program, which emphasizes the importance of having deliberate and purposeful conversations as well as engaging in activities that increase children's and adolescents' awareness of racial inequities and injustices such as systemic racism, racial stereotyping, and the harm caused by racial privilege for those who are excluded (Hughes, Fisheer, & Cabrear, 2020)
- Significantly expanded and updated coverage of media and screen time (Musa & others, 2022)
- Updated data indicating that 15- to 17-year-olds spent 3 hours and 4 minutes per day on screen time, with boys spending almost one hour more on screen time than girls (3 hours and 31 minutes a day versus 2 hours and 33 minutes a day) (Livingston, 2019)
- Recent data indicating that in 2020, 16- to 24-year-old girls preferred Instagram as their social platform, followed by WhatsApp; boys in this age range preferred Facebook, followed by WhatsApp (Geyers, 2021)
- New data indicating that the COVID-19 pandemic lockdown led to adolescents spending 76 percent more time on social media apps in 2020 than in 2019 (Influencer Marketing Hub, 2021)
- Inclusion of a recent study that revealed more time spent on social media was linked to heavier substance use in adolescence (Vannucci & others, 2020)
- Coverage of a recent research review that revealed adolescents' higher use of social media is linked to increased depressive symptoms (Liu & others, 2022)
- Description of a recent research review that concluded high social media use by adolescents was linked to increased anxiety, stress, and depression (Shannon & others, 2022)
- Discussion of a recent study of university students that found approximately 23 percent of students can be classified as "smartphone-addicted" (Randjelovic & others, 2021)
- Recent research indicating that social media has helped adolescents cope with anxious feelings during the COVID-19 pandemic (Cauberghe & others, 2021)
- Description of a recent study that found neighborhood poverty was linked to delinquency in adolescence, especially through maternal stress and adverse childhood experiences (Wang, Choi, & Shin, 2020)
- Coverage of a recent national survey that found 13.8 percent of 12- to 17-year-olds had experienced at least one major depressive episode in the past year (Mental Health America, 2021)

- Coverage of a recent Chinese study that found adolescents' perceived stress was linked to subsequent depressive symptoms (Fu, Ren, & Liang, 2021)
- New Chinese study in which adolescents showed more depressive symptoms after the appearance of COVID-19, but engaging in more physical activity during the quarantine helped to buffer the association between the pandemic and depressive symptoms (Ren & others, 2021)
- Inclusion of a recent study that revealed parental depression, rejection, and low warmth were risk factors for adolescent depression (Johnco & others, 2021)
- New study indicating that from 2009 to 2019, the percentage of ninth- to twelfth-grade U.S. students who thought seriously about suicide increased from 14 to 18.8 percent (Underwood & others, 2020)
- New national study indicating the rate at which girls 12 to 17 years of age visited an emergency department for suspected suicide attempts increased by 51 percent in February and March of 2021 compared with the same time period in 2019 prior to the COVID-19 pandemic; among adolescent boys in this time frame, emergency department visits involving suspected suicide attempts increased by 4 percent (Yard & others, 2021)
- New research with more than 290,000 adolescents across a four-year period indicating that the highest stressor for suicidal ideation was peer conflict, followed by family circumstances such as conflict with parents (Kim, 2021)
- New *Connecting with Careers* feature on Yolanda Curry, a high school counselor
- New research indicating that the Fast Track intervention during childhood decreased the probability of suicidal ideation and hazardous drinking in adolescence and emerging adulthood as well as opioid use in emerging adulthood (Godwin & The Conduct Problems Prevention Research Group, 2020)

Chapter 13: Physical and Cognitive Development in Early Adulthood

- Revisions based on comments from leading expert John Schulenberg
- New data on the increased number of people living with their parents, with the most significant group being 18- to 24-year-olds (71 percent in 2020) (Fry, Passel, & Cohn, 2020)
- Updated data on the increasing percentage of first-year college students who rate "being well off financially" or "contributing something meaningful" as "essential" or "very important" in their life (Stolzenberg & others, 2020)
- Updated data on the increasing percentage of first-year college students who report that they frequently or occasionally feel overwhelmed, depressed, or anxious (Stolzenberg & others, 2020)
- New discussion of how the COVID-19 pandemic dramatically changed the way first-year college students experienced education in 2019 and 2000, as well as the increasing return to in-person classes in 2021 (Sorgo & others, 2022)
- Description of a recent study which found that after the onset of the COVID-19 pandemic, college students' externalizing problems and attention problems increased (Copeland & others, 2021)
- Inclusion of a study that revealed more than half of college students reported high levels of stress related to taking online classes during the COVID-19 pandemic (Sorgo & others, 2022)
- Updated U.S. data indicating that 39.8 percent of adults 20 to 39 years of age were classified as obese in 2020, which represents a 11 percent increase since 2000 and a 7 percent increase since 2012 (Centers for Disease Control and Prevention, 2022)
- Updated data on obesity in different ethnic groups in 2020, with Black American (49.9 percent) and Latino (45.6 percent) adults having the highest rates (Centers for Disease Control and Prevention, 2022)
- Description of a 2020 international comparison of 33 countries that found Mexico had the highest overweight or obesity rate (75 percent) followed by the United States (73 percent); Japan had the lowest rate (27 percent), followed by South Korea (34 percent) (OECD, 2022)
- Coverage of a recent study in which women, especially those who were overweight, reported increased anxiety, depression, and loneliness during the COVID-19 pandemic (Lofrano-Prado & others, 2021)
- Updated data indicating that in 2020, 28 percent of U.S. college students reported having had five or more drinks in a row at least once in the last two weeks (Schulenberg & others, 2021)
- Updated data in Figure 3 from the Monitoring the Future study at the University of Michigan showing that in 2020 binge drinking peaked at 21 to 26 years of age, with 31 percent in this age group reporting they had engaged in binge drinking at least once in the last two weeks (Schulenberg & others, 2021)
- Coverage of a recent Korean study that found binge-drinking college students had deficits in memory and executive function (Kang & Kim, 2022)
- Updated data indicating that cigarette use continued to decline to all-time lows among young adults in 2020, with annual prevalence down to 21 percent, 30-day prevalence down to 9.5 percent, daily prevalence down to 5.3 percent, and half-pack-a-day prevalence down to 2.8 percent (Schulenberg & others, 2021)
- New survey showing that in 2020, 30-day prevalence of vaping nicotine increased to 14 percent among 19- to 30-year-olds overall, with the highest prevalence found among 18- to 20-year-olds at 21 to 22 percent, and prevalence declining thereafter across age groups (Schulenberg & others, 2021). Thus, for emerging adults, vaping nicotine quickly has become the main way they use nicotine.
- New research indicating a dramatic increase in marijuana use by emerging adults (Schulenberg & others, 2021)
- New national survey indicating that in 2020 marijuana use in the last 30 days was highest among 21- to 26-year-olds (44 to 47 percent), then declined in older age groups (Schulenberg & others, 2021)
- New data from a 2020 national study indicating that vaping marijuana is rapidly increasing among college students, with

a 30-day prevalence being highest among individuals in their early to mid-twenties (Schulenberg & others, 2021)

- Discussion of a recent study indicating that across the college years, rates of kissing, touching, performing and receiving oral sex, and engaging in penetrative sex are increasing (Lefkowitz & others, 2019). Also in this study, contraceptive use decreased during the college years, especially for men and for students in serious romantic relationships.
- Description of a recent research review that found, overall, individuals rated their casual sexual relationships positively (Wesche, Claxton, & Waterman, 2021). They also reported that these casual sexual encounters were associated with short-term declines in emotional well-being. Women and individuals with less permissive attitudes toward casual sexual encounters experienced worse emotional outcomes and higher rates of alcohol use prior to casual sexual encounters.
- Inclusion of a recent study that revealed individuals participating in a “friends with benefits” relationship reported that sexual exclusivity is an important rule for this type of relationship (van Raalte & others, 2022)
- Coverage of a recent national U.S. survey indicating that 30.9 percent of men and 19.1 percent of women 18 to 24 years of age reported being sexually inactive in the past year (Ueda & others, 2020). Sexual inactivity increased among men 18 to 24 and 25 to 34 years of age from 2000 to 2018, and sexual inactivity increased across the same time period for women from 25 to 34 years of age.
- Description of a recent study in which sexual minority reports of past-year general discrimination, victimization, and health care discrimination peaked in early adulthood and then again in middle adulthood (Rice & others, 2021)
- Updated data indicating that in 2019, approximately 1.2 million people in the United States were living with an HIV infection, with approximately 34,800 new HIV infections diagnosed that year (HIV.gov, 2021)
- Updated global data showing that the total number of individuals living with HIV was 37.7 million in 2021, with the majority of individuals with HIV living in sub-Saharan Africa (UNAIDS, 2022)
- New data indicating that in 2020, there were 1.5 million new cases of HIV worldwide, which was a reduction of 52 percent since the peak in 1997 (UNAIDS, 2021)
- Coverage of a recent study that found increasing rates of rape among college students (Koss & others, 2022), with 33.4 percent of college women reporting that they had experienced rape or attempted rape in 2015, compared with 27.9 percent in 1985
- Inclusion of a recent study in which almost half (48.5 percent) of rape victims had PTSD (Nothling & others, 2022)
- Discussion of the No Means No Worldwide program (2021) that has been effective in reducing the incidence of sexual assault in the African countries of Kenya and Malawi, with the organization’s 12-hour curriculum emphasizing interactive verbal skills, role playing, and other techniques to encourage participants to speak up, prevent, or intervene in a sexual assault
- Coverage of recent research indicating that during the COVID-19 pandemic, college students with more grit

reported having better eating and sleeping behaviors than those who had less grit (Martin & others, 2022)

- Inclusion of content noting that in the spring of 2022, employers planned to hire 31.6 percent more graduates from the class of 2022 than they had hired from the class of 2021 (NACE, 2022)
- Description of how the contexts in which people work in the United States and around the world changed dramatically in 2020 as the onset of the coronavirus pandemic forced many employers to require their employees to work at home rather than in an office, classroom, or other settings in order to comply with social distancing and quarantine requirements in their communities (Kniffin & others, 2021)
- Coverage of a new book, *Overload: How Good Jobs Went Bad and What We Can Do About It* (Kelly and Moen, 2020), that describes how employees and managers can adopt creative and practical work redesigns that give workers more control over how and where they work, leading to improvements in employees’ health, well-being, and ability to manage their personal and work lives
- New content on the major increase in unemployment occurring at the onset of the coronavirus pandemic in 2020, followed by a significant drop in May 2022
- New *Connecting with Careers* profile on Anna Boyer-Chadwick, an academic advisor whose university’s advising and retention program is a nationally recognized model for Latino student success
- Coverage of a recent study in which more mothers than fathers were dissatisfied with their work-family balance and their partner’s share of the load before the COVID-19 pandemic (Craig & Churchill, 2020)

Chapter 14: Socioemotional development in Early Adulthood

- Inclusion of recent research in which infants who showed higher levels of inhibition at 14 months became reserved and introverted adults with lower social functioning with friends and family at age 26, with a higher risk of developing anxiety and depression (Tang & others, 2021)
- Discussion of a new study in four European countries that found adult attachment security predicted the quality of intimate couple relationships during the COVID-19 lockdown (Eder & others, 2021)
- Description of a recent research review that concluded having a secure attachment style reduced suicidal risk, while having an insecure attachment style made it more difficult to cope with relationship issues and was associated with increased suicidal risk (Zortea & others, 2021)
- Inclusion of a recent study of 1.8 million online daters from 24 countries, in which in every country, a person’s resource-acquisition ability (as indicated by level of education and income) was positively linked to the amount of attention they received from other site users (Jonason & Thomas, 2022). Resource-acquisition ability increased the amount of attention received by men almost 2.5 times that of women, with the gender difference occurring in every country.

- Inclusion of updated data reporting that in 2021, 48.2 percent of individuals 18 years of age and older were single in the United States (U.S. Census Bureau, 2021)
- Coverage of a recent national poll in which singles were making more time for their romantic search, refining what they were looking for in a partner, and rethinking how and where they intended to search for love in the face of the COVID-19 pandemic (Match.com, 2020)
- New cross-cultural study of more than 7,000 individuals in 25 countries confirming the universality of Sternberg's triarchic theory (Sorokowski & others, 2021)
- New *Connecting Through Research* feature on "The Role of Friendship in a Romantic Relationship Breakup" (Clark & others, 2020)
- Discussion of a recent national survey of 5,000 single U.S. adults in which a majority changed their priorities after the onset of the COVID-19 pandemic, both in becoming better versions of themselves and in reconsidering what they were looking for in a romantic partner (Match.com, 2021)
- Updated data on the increasing percentage of adults living with an unmarried partner, with an equal number (17 percent) of 18- to 24-year-old men and women living with an unmarried partner while a greater share of 25- to 34-year-old women (12 percent) than men (7 percent) lived with an unmarried partner (U.S. Census Bureau, 2021)
- Coverage of a recent study in nine European studies that revealed spending more time in unmarried cohabitation was associated with an increased tolerance of divorce (Kreidl & Žilínčiková, 2021)
- Inclusion of a recent study that found no differences between cohabiting couples and married couples at the initial assessment in relationship adjustment, although cohabiting mothers who stayed with their partner over the 10 years showed significantly greater declines in relationship adjustment over the 10 years compared with married mothers (Foran & others, 2022)
- Update on marital trends indicating that in 2021, 51.8 percent of adults in the United States were married, down from 72 percent in 1960 (U.S. Census Bureau, 2021), with the average age for a first marriage climbing to 30.4 years for men and 28.6 years for women, higher than at any previous point in history
- Updated data showing that the U.S. divorce rate has declined in recent decades, peaking at 5.1 divorces per 1,000 people in 1980 and declining to 2.9 divorces per 1,000 in 2018 and then 2.0 divorces per 1,000 in 2021 (U.S. Census Bureau, 2021)
- Description of a recent study that found it is not unusual for remarried adults to carry negative patterns that produced failure in an earlier marriage into their current remarried relationship (Yazdani & others, 2021)
- Revised section heading, "LGBTQ Adults"
- Expanded and updated content on transgender adults (Vyas & others, 2021)
- Inclusion of a recent study of transgender individuals in which gender affirmation—being recognized as one's gender identity, gender expression, or gender role—was associated with a lower probability of suicidal ideation and psychological distress, while discrimination was linked to a higher

probability of suicidal ideation and psychological distress (Lelutiu-Weinberger, English, & Sandanapitchai, 2020)

- Discussion of a recent study that indicated victimization and discrimination predicted increased suicidal ideation, while community connectedness reduced suicidal ideation (Rabasco & Andover, 2021)
- Description of recent research indicating that psychotherapy targeting internalized stigma and non-affirmation experiences could be effective in reducing gender-related stress and improving resilience (Budge, Sinnard, & Hoyt, 2020)
- New *Connecting with Careers* profile on Stephanie Budge, a psychotherapist and college professor who specializes in transgender research
- New section, "Going Beyond Gender as Binary," that reflects Janet Shibley Hyde and her colleagues' (2019) recent conclusion that gender is a mosaic that includes a number of categories rather than a binary division consisting of only two categories—girls/women and boys/men

Chapter 15: Physical and Cognitive Development in Middle Adulthood

- Updates based on a U.S. Census Bureau (2020) assessment that in 2019, 120,255,062 people in the United States were 40 to 64 years of age, which accounts for 26.7 percent of the U.S. population
- Updated data on weight gain in middle age indicating that the prevalence of obesity in middle-aged adults (44.3 percent) was higher than in younger adults (39.8 percent) and older adults (41.5 percent) (Stierman & others, 2021)
- Coverage of a recent meta-analysis that concluded older adults with sarcopenic obesity are at higher risk of adverse musculoskeletal outcomes such as falls and fractures than are individuals with sarcopenia, obesity, or neither condition (Gandham & others, 2021)
- Inclusion of a recent study of individuals 55 years of age and younger in which those with hypertension had lower memory test scores (Teles de Menezes & others, 2021)
- New study indicating that most of the Life's Simple 7 actions to improve cardiovascular conditions were linked to greater longevity (van Oort & others, 2021)
- New *Connecting Through Research* feature describing an aerobic exercise intervention that reduced the symptoms of middle-aged adults with metabolic syndrome (Morales-Palomo & others, 2019), and a 5-year follow-up study that revealed exercise training not only reduced metabolic syndrome symptoms but also decreased drug use for metabolic syndrome (Morales-Palomo & others, 2021)
- Discussion of a recent Norwegian study of individuals 40 years of age and older in which 42 percent of women and 52 percent of men reported sleeping less than 7 hours per night (Sivertsen & others, 2021)
- Coverage of a longitudinal study that indicated persistent short sleep duration of six hours per night at 50 and 60 years of age was associated with increased risk of dementia (Sabia & others, 2021)

- New content indicating that in 2018, 52 percent of U.S. adults had at least 1 of 10 selected diagnosed chronic conditions (such as arthritis, cancer, and cardiovascular disease) and 27 percent had multiple chronic conditions (Boersma, Black, & Ward, 2020)
- Updated data indicating that cancer continued to be the main cause of death in middle-aged individuals in 2019, followed by heart disease (Heron, 2021)
- Inclusion of a recent cross-cultural study that found middle-aged women in China and Japan had a lower prevalence of hot flashes than their counterparts in the United States and Canada (Shea, 2020)
- Description of a research review of recent studies that concluded hormone replacement therapy (HRT) initiated in post-menopausal women near the onset of menopause confers a cardioprotective benefit, in contrast with other studies that simply showed that HRT does not cause harm (Taylor & others, 2021)
- Discussion of recent research that revealed HRT contributes to a decreased incidence of post-menopausal sarcopenia (Onambele-Pearson & others, 2021)
- Coverage of a recent research review that concluded testosterone replacement therapy (TRT) improves sexual function in men who have hypogonadism, although positive data on other outcomes, such as reduced risk of cardiovascular disease, are inconclusive (Corona, Torres, & Maggi, 2020)
- Inclusion of a recent study that revealed sexual satisfaction in 40- to 64-year-olds was associated with a lower level of physical illnesses, better self-rated health, absence of depression, higher importance placed on sexuality and intimacy, having a partner, living with a partner in the same household, and experiencing a lower level of loneliness (Buczak-Stec, Konig, & Hajek, 2021)
- Description of a recent study in which better physical fitness in middle and late adulthood was linked to faster processing speed (Orland & others, 2021)
- Updated data indicating that in 2020 in the United States, 80.6 percent of 45- to 54-year-olds were in the workforce (a decrease of 1.3 percent since 2000, but an increase of 1.2 percent since 2015) and 64.7 percent of 55- to 64-year-olds were in the workforce (an increase of 9.3 percent since 2000 and an increase of .6 percent since 2015) (Bureau of Labor Statistics, 2021)
- Discussion of a recent study of middle-aged adults that found work engagement and occupational self-efficacy were associated with work ability (Wallin & others, 2021)
- Inclusion of a recent study of 40- to 74-year-olds that revealed engaging in greater physical activity was associated with a reduced risk of dementia (Kitamura & others, 2022)
- Description of a recent study conducted during the COVID-19 pandemic that found a link between increased engagement in leisure-time activities and improved mental health, supporting leisure's role in facilitating stress alleviation and enhancing well-being during taxing events such as the COVID-19 pandemic (Shen & others, 2022)
- Coverage of a national survey conducted in 2020 in which individuals reported religious affiliation had decreased to

47 percent, representing less than half of the adult population for the first time since the question was initially asked more than 80 years ago (Gallup, 2021)

- Coverage of a survey indicating that more U.S. adults than people in other advanced economies indicated that the COVID-19 pandemic had strengthened their religious faith, with nearly 30 percent of U.S. adults reporting that the outbreak had boosted their faith (Pew Research Center, 2021)
- Discussion of a recent research review that concluded aging adults who have a sense of meaning in life have better psychological and social functioning as well as adaptation to traumatic events (Dezutter, Haugan, & Saarelainen, 2022)
- Inclusion of a recent research review that concluded the ability to live a meaningful life following cardiovascular disease events, such as a heart attack or stroke, is associated with lower stress and better mental health (Vos, 2021)
- Description of a recent study that revealed meaning in life predicted less stress and worry about negative effects of the COVID-19 pandemic (Humphrey & Vari, 2021)

Chapter 16: Socioemotional Development in Middle Adulthood

- Description of a recent study of grandparents aged 40 years and older that revealed grandchildren's respect for their grandparents increased grandparents' sense of generativity and their life satisfaction (Scott & others, 2022)
- Coverage of a recent study of college students that found daily hassles predicted subsequent health complaints (Tran & others, 2021)
- Inclusion of a 45-year longitudinal investigation in which individuals who had better self-control in childhood aged more slowly in their bodies and showed fewer signs of aging in their brains by middle age and were better equipped to manage a range of later-life health, financial, and social demands (Richmond-Raker & others, 2021). Self-control in middle age was associated with aging outcomes after controlling for childhood self-control, indicating that midlife might still be a window for improving self-control.
- Discussion of a recent longitudinal study of U.S. adults 50 years of age and older in which an increase in self-control across four years was linked to better health behavior (increased physical activity, fewer sleep problems), higher psychological well-being (positive affect, life satisfaction, optimism, purpose, and mastery), lower psychological distress (depression and hopelessness), decreased loneliness, and more contact with friends (Hong & others, 2021)
- Description of recent research that found individuals high in conscientiousness tended to live longer (Iwasa & others, 2022); were less likely to be obese (Cheng & others, 2020); showed greater distress during the COVID-19 pandemic (Brosch & others, 2022); had greater motivation at work (Sunwunmi, 2022); were less likely to engage in compulsive buying as college students (Otero-Lopez, Santiago, & Castro, 2021); were less likely to have an Internet gaming disorder (Chew, 2022); and had greater life satisfaction (Heilmann & others, 2021)

- Inclusion of recent research indicating that individuals high in agreeableness were more motivated at work (Sunwunmi, 2022)
- Coverage of recent research that found individuals high in extraversion lived longer (Iwasa & others, 2022)
- Discussion of recent research in which individuals with high neuroticism were more likely to experience stress and loneliness in times of crisis such as the COVID-19 pandemic (Ikizer & others, 2022) and more likely to have an Internet gaming disorder (Chew, 2022)
- Coverage of a recent study that revealed in all 61 countries studied, individuals with above-average optimism had better well-being (Baranski & others, 2021)
- New *Connecting Through Research* feature on recent research that found being more optimistic and experiencing higher social support in middle age reduced the negative effects of growing up as a child in an environment characterized by adversity and disadvantage (Non & others, 2020)
- Coverage of a recent study of 18- to 84-year-olds in which having a happy relationship or marriage, having children, and being there for others were the life goals rated as most important across almost the entire adult life span, with having a happy relationship or marriage differing strongly by gender, being more important for women up to middle adulthood but more important for men in late adulthood (Burchinger & others, 2022)
- Discussion of a longitudinal study in which hostile marital interactions increased couples' psychological distress, health-risk behaviors, and body mass index (BMI) in early middle age, which led to an increased vulnerability for physical illness in later life (Lee & others, 2021)
- Inclusion of content indicating that since 2010, the divorce rate has stagnated among middle-aged adults but has continued to increase in older adults (Brown & Lin, 2022)
- New data showing that 36 percent of adults who are getting divorced today are 50 years of age and older (Brown & Lin, 2022)
- Description of a longitudinal study that revealed women who divorced at age 50 and older experienced a 45 percent drop in their standard of living, whereas the standard of living for divorced men only decreased by 21 percent (Lin & Brown, 2021). While repartnering reversed most of the economic costs of divorce for women in this age group, few formed new co-residential partnerships following the divorce.
- Updated data indicating that from 2001 to 2017, the number of grandparents in the United States grew by 24 percent—from 56 million to 70 million (AARP, 2019)
- Coverage of a recent Japanese study in which caring for at least one co-residing grandchild age 6 or younger was neither detrimental nor beneficial to the grandparents' health (Oshio, 2021)
- Inclusion of a research review of studies in 10 countries that revealed grandchildren raised by grandparents had adverse mental/behavioral health and educational outcomes compared with their peers raised by biological parents (Xu & others, 2022)

Chapter 17: Physical development in Late Adulthood

- Updated data indicating that in 2019, life expectancy in the United States was 78.8 years but decreased to 77.8 years in 2020 because of the extensive increase in deaths during the COVID-19 pandemic (Arais, Tehada-Vera, & Ahmad, 2021)
- New content and recent data on ethnic and gender differences in life expectancies, including decreases in life expectancy in 2020 because of the COVID-19 pandemic
- Updated data indicating that of June 2022, the oldest living person in the world was 118-year-old Lucile Randon of France and the oldest living person in the United States was 114-year-old Bessie Hazel Plummer of Massachusetts
- New content on the increasing interest in dividing late adulthood into four groups: (1) young old (65–74), (2) middle old (75–84), (3) oldest old (85+), and centenarians (100+)
- New content on the role of three of the sirtuins, SIRT 1 (Han & others, 2022), SIRT 6 (Yuan & others, 2022), and SIRT 7 (Lagunas-Rangel, 2022), in DNA repair and greater longevity
- New content on how the death toll from the COVID-19 pandemic in 2020 illustrated the devastating impact of severe viral diseases on the already declining immune system function of older adults (Witkowski, 2022)
- Coverage of a recent study in which the corpus callosum began to show protracted decline during the mid-to-late fifties, followed by further decline (Danielsen & others, 2020)
- Inclusion of a recent study of mice that found chronic stress followed by social isolation decreased hippocampal neurogenesis (Du Preez & others, 2021)
- Discussion of a recent study of older adults that revealed higher frequency and duration of awakenings throughout the night were linked to higher levels of frailty and shorter longevity (Guida & others, 2021)
- New commentary on how a lack of sleep causes health difficulties, and conversely, certain physical problems can cause older adults to get inadequate sleep, with examples including the aches and pains of arthritis, breathing problems involving sleep apnea, and prostate problems causing men to get up multiple times during the night to urinate
- New content on sleep difficulties being increasingly recognized as a risk factor for Alzheimer disease (Andre & others, 2021)
- Description of recent research indicating proprioceptive training (balancing on one leg or walking toe to heel in a straight line, for example) reduced falls and increased balance and mobility in older adults (Espejo-Antunez & others, 2020)
- Coverage of a recent meta-analysis that concluded vision impairment was linked to cognitive decline and dementia (Shang & others, 2021)
- Inclusion of a recent study in which older adults with cataracts had a higher frequency of falls (Dos Santos Tavares & others, 2022)
- Discussion of recent research that found older adults' hearing problems were linked to increased falls (Wang & others, 2022), frailty and disability in daily living activities (Frion & others, 2022), loneliness (Huang & others, 2021), less social

engagement (Shukla & others, 2021a), depression (Shukla & others, 2021b), and dementia (Chern & others, 2022)

- Description of recent studies indicating that older adults with dual vision and hearing impairment had a significant decline in cognitive functioning (Parada & others, 2021), increased frailty (Zhao & others, 2022), and increased risk of dementia (Kuo & others, 2021)
- Inclusion of a recent study that found decreased olfactory function in older adults was linked to lower sexual motivation and less emotional satisfaction with sex (Siegel & others, 2021)
- Discussion of a recent study of adults 65 years of age and older that revealed those with olfactory dysfunction were likely to die earlier (Choi & others, 2021)
- Updated data indicating that in 2018, 75.2 percent of men and 73.9 percent of women 60 years of age and older had hypertension (high blood pressure) (Osthege & others, 2020)
- New commentary on how it is important to note that one of the main reasons some older adults are not having sex is that they are unpartnered, especially in the case of widowed women
- Coverage of a recent national study of 65- to 80-year-olds who were asked about their sexual activity and sexual health (University of Michigan, 2018). Forty percent indicated they currently were sexually active, with sexual activity decreasing with age (46 percent age 65 to 70, 39 percent age 71 to 75, and 25 percent age 76 to 80). Men were more likely to report being sexually active (51 percent) than women (31 percent).
- Discussion of a recent study of 55- to 84-year-olds that revealed 60 percent of the individuals experienced their sexuality as enjoyable and 44 percent as important (Beerepoot & others, 2022), with greater longevity among those who enjoyed their sexuality and perceived it as important
- Inclusion of a recent study that found older lesbian, gay, and bisexual adults were as likely to remain sexually active as older heterosexuals (Brennan-Ing & others, 2021). Gay and bisexual men were more likely than heterosexual men to report some sexual problems. Regardless of sexual orientation, older adults rarely had their sexual health needs addressed in health-care settings.
- Updated data indicating that in 2019, heart disease (25.1 percent) continued to be the main cause of death in U.S. adults 65 years of age and older, followed by cancer (20.6 percent) (Heron, 2021). In U.S. adults age 85 and older, heart disease caused more deaths (28.7 percent) than cancer (11.9 percent).
- Added commentary that during the height of the COVID-19 pandemic, COVID-19 became the third leading cause of death for older adults in the United States
- New and updated content on the causes of death in various ethnic groups, with heart disease being the main cause of death for non-Latino Whites, Black Americans, and Native Americans, followed by cancer (Heron, 2021) and cancer being the main cause of death for Latinos and Asian Americans, followed by heart disease
- Coverage of a recent meta-analysis that found aerobic exercise improved functional ability, reduced pain, and increased the aerobic capacity of individuals with arthritis (Ye & others, 2022)
- Description of a study involving a 25-year follow-up that revealed an association between weekly exercise time and

all-cause mortality, with the lowest risk of death for individuals exercising 2.6 to 4.5 hours per week (Schnohr & others, 2021)

- Discussion of recent research indicating that resveratrol was linked to improving systolic blood pressure (Weaver & others, 2021), decreasing pulmonary arterial hypertension (Mirhadi & others, 2021), and suppressing tumor growth (Brockmueller & others, 2021)
- Description of a recent meta-analysis that concluded elastic band resistance training improved older adults' lower body function and muscle quality (Herda & Nabavizadeh, 2021)
- Coverage of a recent research review that concluded exercise is an effective behavioral intervention for improving mitochondrial health and cellular antioxidant capacity in older adults (Lippi & others, 2022)
- Inclusion of a recent study that revealed a 12-week aquatic exercise program for older women improved their immune function and mood (Lee, Lim, & Kim, 2021)
- Discussion of a recent study of older adults that found exercise reduced the incidence of subsequent falls in those with previous falls, and that faster processing of information increased the effectiveness of exercise in reducing subsequent falls (Lu-Ambrose & others, 2021)
- Description of a recent study of older adults with a mean age of 75 years in which moderate and intense exercise reduced their risk of cognitive impairment (Endeshaw & Goldstein, 2021)
- New and updated content on what is called the "obesity paradox" that suggests older adults who are overweight or obese are not at increased risk for health problems or decreased longevity. However, many studies do support a connection between obesity measured by BMI and health risks in older adults (Santamaria-Ulloa & others, 2022).
- Inclusion of a recent large-scale study of more than 7,000 individuals 60 years of age and older that revealed individuals with obesity had an increased burden of multimorbidity (having two or more chronic conditions) and functional limitations compared with individuals of normal weight (Lynch & others, 2022)
- Coverage of a recent study that found obesity (as measured by BMI) was associated with increased risk of death in older adults with COVID-19 (Sharma, 2021)
- Inclusion of a recent research review that indicated calorie restriction reduces inflammation in normal brain aging and some neurodegenerative diseases, such as Alzheimer disease (Fontana & others, 2021)
- New content on the COVID-19 pandemic raising special concerns in 2020 about the spread of the virus in nursing homes (Lafuente-Lafuente & others, 2022). As of June 30, 2021, nursing home and assisted living facilities accounted for 31 percent of deaths caused by COVID-19.

Chapter 18: Cognitive Development in Late Adulthood

- Revisions based on comments by leading experts Deborah Carr, Patricia Reuter-Lorenz, and Phyllis Moen
- Coverage of a recent German study of 40- to 85-year-olds in which faster processing speed was related to greater life satisfaction (Siedlecki & others, 2020)

- Discussion of a recent study that indicated processing speed was an important indicator of older adults' daily functioning competence (Roye & others, 2022)
- Description of a recent study of 70- to 89-year-olds in which better processing speed was linked to the absence of disease component of successful aging (Bosnes & others, 2022)
- Inclusion of a recent study of drivers 70 years of age and older that revealed slower visual processing was linked to higher crash rates (Swain & others, 2021)
- Discussion of a recent study in which alertness training improved the visual processing speed of older adults (Penning & others, 2021)
- Description of a study of 60- to 80-year-olds that indicated engaging in 100 sessions of cognitive mobile games designed to train and challenge a person's brain increased their processing speed (Bonnechere & others, 2021)
- Coverage of a recent research review of game-based training and older adults' cognition in which the training improved their selective attention (Wang & others, 2021)
- Inclusion of a recent study of adults age 80 years and older that revealed those with superior episodic memory had better attention and executive function than their counterparts with average-for-age episodic memory (Maher & others, 2021)
- New content on an important aspect of episodic memory being mental time travel, including research by Daniel Schacter and his colleagues (Maher & others, 2021; Schacter & Addis, 2007)
- New study on how older adults remembered fewer episodic details from the past and imagined fewer episodic details about the future than younger adults did (Madore & Schacter, 2016)
- Discussion of a recent meta-analysis in which interventions that increased older adults' physical exercise improved their working memory (Zhidong & others, 2021)
- Coverage of a recent study of 15- to 80-year-olds in which working memory began to decline at 36 years of age, followed by another clear decline in both verbal and visual-spatial working memory at 66 years and older (D'Antuono & others, 2022)
- Inclusion of a recent meta-analysis that found prospective memory training of older adults was effective in a number of studies, with most of the effective training regimes consisting of cognitive and strategy-based memory training (Tse & others, 2022)
- Discussion of a recent research review that indicated mental imagery (using external aids such as lists, planners, and calendars) can be a useful strategy-based approach to facilitate prospective memory in older adults (Tsang & others, 2022)
- Coverage of a recent study that revealed when older adults use a self-imagination strategy, their memory improves (Zhang & others, 2022)
- Description of a recent study that indicated having confidence in the effectiveness of using retrieval memory strategies and using them quickly improved the memory of older adults more than for younger adults (Frank & others, 2022)
- Inclusion of a recent research review that concluded exercise training, especially aerobic exercise, improves older adults' memory through better blood circulation, synaptic plasticity, and possibly neurogenesis (Babaei & Azari, 2022)
- Description of a recent study of older adults that found the highest-performing group of participants on executive function tasks was differentiated from the lowest-performing group by educational attainment, more novel cognitive activity, lower pulse pressure, younger age, faster gait, lower BMI, and better balance (Caballero & others, 2021)
- Coverage of a recent meta-analysis that concluded regular physical exercise training, especially aerobic exercise and mind-body exercise (combined body movement, mental focus, and controlled breathing), improved working memory, cognitive flexibility, and inhibitory control of executive function in healthy older adults (Xiong & others, 2021)
- Description of a recent study in which a moderate-intensity aerobic training program increased prefrontal cortex and executive functioning (Park, 2022)
- Inclusion of a recent study in which older adults' meta-cognitive accuracy declined beyond the expected decline in task performance (Overhoff & others, 2021)
- Coverage of a recent study that revealed older adults with a lower level of metamemory engaged in impaired financial decision making (Yu & others, 2022)
- Discussion of a recent study of 53- to 86-year-olds that found engaging in present-moment attention was linked to better affective well-being (Mahlo & Windsor, 2021)
- Description of recent research that revealed a mindfulness-awareness program improved the working memory and divided attention of older adults with mild cognitive impairment (Yu & others, 2021)
- Inclusion of a recently expanded integrative model of wisdom that proposes in challenging real-life situations, non-cognitive wisdom components (an exploratory orientation, concern for others, and emotion regulation) moderate the effect of cognitive components (knowledge, metacognitive capacities, and self-reflection) (Gluck & Westrate, 2022)
- New study confirming that increased educational attainment has improved the cognitive functioning of recent cohorts of older adults (Turcotte & others, 2022)
- Coverage of a new study of older Mexican adults that indicated in addition to one's own education, a spouse's education was associated with better cognitive ability (Saenz & others, 2020)
- Inclusion of a recent study that revealed high blood pressure was associated with lower cognitive function in older adults (Naharci & Katipoglu, 2021)
- Discussion of a recent study that found the risk of cognitive decline was lower among older adults who engaged in either moderate-to-high intensity exercise or low-intensity exercise (Endeshaw & Goldstein, 2021)
- Coverage of a recent meta-analysis of a large number of studies that concluded virtually any exercise is better than no exercise for older adults' cognition and that a lower level of exercise is required to improve the cognitive activity of obese older adults than their non-obese counterparts (Gallardo-Gomez & others, 2022)

- Inclusion of a recent study in which higher dietary fiber intake was associated with improvement in specific components of cognitive function in older adults (Prokopidis & others, 2022)
- Description of a recent study of more than 1,000 older adults (mean age = 79) who were followed for more than 10 years that showed cognitive decline accelerated considerably at 3.7 years on average before death (Wilson & others, 2020)
- Discussion of a recent meta-analysis in which physical activity significantly improved the cognitive function of sedentary older adults (Zhao & others, 2022)
- Inclusion of a large-scale study in India of more than 30,000 older adults that revealed those who engaged in frequent physical activity had better cognitive functioning (such as memory and executive function) than older adults who did not participate in physical activity (Kumar & others, 2022)
- Description of a recent study that discovered interactive physical-cognitive, game-based training was effective in reducing physiological fall risk and improving cognitive function in community-dwelling older adults (Phirom & others, 2020)
- Discussion of a research review indicating that several studies have found that strength and cognitive training improves cognition and function in older adults (Esmaeilzadeh & others, 2022)
- Coverage of a recent analysis that concluded lifelong bilingualism protects against cognitive decline and reduces the risk of developing Alzheimer disease (Liu & Wu, 2021)
- Updated data on labor force participation among older adults, including effects of the COVID-19 pandemic (Bureau of Labor Statistics, 2021)
- Update on the percentage of men and women age 65 and older who are working (U.S. Bureau of Labor Statistics, 2021)
- Coverage of a recent study of almost 350,000 50- to 75-year-olds that indicated non-Latino White men and women were more likely to be working than Black American men and women and Latinas (Moen & others, 2022)
- New data from a 2021 Gallup poll indicating that the average age of retirement in the United States was 62, the highest in 20 years (Gallup, 2021). However, the respondents reported that they expected to retire at 64, lower than in 2020 (66 years) and 2019 (65 years).
- Expanded content indicating that depression is often undiagnosed and undertreated in older adults because of the assumption that it is “normal” to be sad when you are old
- New commentary noting that older adult men, especially older adult Black American men, often underreport depression symptoms because of the stigma associated with it. And while older men have lower depression rates than older women, they have higher suicide rates, an indication of their undetected and undertreated depression.
- Coverage of a recent study that revealed the greater occurrence of depression in older adult women reflected having lower incomes, having one or more chronic illnesses, and living alone (Ferri & others, 2022)
- Description of a recent meta-analysis that concluded regular exercise can reduce depression in older adults (Bigarella & others, 2022)
- Inclusion of a recent Korean study of older adults that found being a woman, having three or more chronic conditions, and not owning their home were associated with a high level of depression (Lim & others, 2021)
- Discussion of a recent study of older adults in which elevated depressive symptoms were linked to physical inactivity, inadequate consumption of fruits and vegetables, and tobacco smoking (Werneck & others, 2021)
- Description of a recent study indicating that living alone and having subjective memory complaints were significant predictors of recent suicidal ideation in men, while depression was a significant predictor for both men and women (Kim & others, 2022)
- Coverage of a recent review in which depression and white matter (mainly axon and myelin sheath connectivity and transfer in the brain) impairment were described as two known risk factors for dementia that more strongly relate to negative outcomes for Black Americans than non-Latino Whites (Zahodne, 2021)
- Updated data on the incidence of Alzheimer disease, including age, gender, and ethnicity variations (Alzheimer’s Association, 2022)
- New content on the ApoE2 allele being the strongest genetic protective factor for Alzheimer disease (Serrano-Pozo, Das, & Hyman, 2021)
- Coverage of recent research indicating that ApoE4 and ApoE2 alleles are associated with methylation differences in the blood, especially in lipid and cholesterol processes (Walker & others, 2021)
- Description of Aduhelm, the first Alzheimer disease-modifying drug to be approved by the FDA in 17 years, with approval based on a PET scan that shows the drug reduces amyloid plaques in the brain (Woloshin & Kesselheim, 2022)
- New mention that the FDA approved Aduhelm in 2022 as the first drug for treatment of mild cognitive impairment related to Alzheimer disease (Cummings & others, 2022)
- New content that describes ongoing research revealing that a combination of drugs that target underlying causes of Alzheimer disease will be needed to reduce the disease, an idea is already reflected in the pipeline of new drugs being developed that target tau and other novel targets
- Description of a recent study of almost 3,000 cognitively normal older adults in which approximately one-fourth developed mild cognitive impairment six years later (Angevaere & others, 2022). In this study, presence of the ApoE4 gene and higher medical burden increased the risk of MCI, while more years of education, higher income, and more leisure time reduced the risk.
- New *Connecting with Careers* profile on Janet Hamada Kelley, Executive Director of the Alzheimer’s Association of San Diego
- Inclusion of a recent study of adults 65 and older that revealed the frequency of prayers at mealtime was associated with increased life satisfaction over time (Jung & Ellison, 2021)

- Coverage of a recent study of middle-aged and older adults that found infrequent religious service attendance was related to poorer cognitive functioning (Henderson & others, 2022). Greater religiosity was associated with better cognitive functioning among Black American women but lower cognitive functioning among non-Latino White men and women.

Chapter 19: Socioemotional Development in Late Adulthood

- Revisions based on comments by leading expert Deborah Carr
- Coverage of a recent meta-analysis of older adults with dementia living in nursing homes and other long-term care facilities revealing that reminiscence therapy increased their cognitive functioning and life satisfaction and decreased their depression and neuropsychiatric symptoms (Saragih & others, 2022)
- Inclusion of a recent study that found reminiscence therapy reduced the cognitive impairment, anxiety, and depression of post-stroke patients (Cheng & others, 2021)
- Coverage of a recent study in which reminiscence therapy was effective in increasing meaning in life, sense of coherence, and coping in older women living in a nursing home during the COVID-19 pandemic (Sales & others, 2022)
- Description of a recent Korean study of older adults that linked increased social activity to higher life satisfaction (Bae & Kim, 2021)
- Revised and updated coverage of Laura Carstensen's socioemotional selectivity theory (Carstensen, 2020, 2021)
- Inclusion of recent research indicating that even during the COVID-19 pandemic, which threatened older adults more than younger adults, older adults reported more positive and fewer negative emotions (Carstensen, Shavit, & Barnes, 2020)
- Discussion of a recent study in which young, middle-aged, and older adults were given the opportunity to earn money for themselves, loved ones, or charities by increasing their physical activity (measured with pedometers assessing daily step counts) (Raposo & others, 2021). No age differences occurred for the "self" or "loved one" conditions, but when earning money for a charity, older adults significantly increased their walking but younger adults did not.
- Description of a recent study in which selection, optimization, and compensation (SOC) strategies were linked to successful aging in Korean women (Han & Ko, 2021)
- Inclusion of a 14-year Japanese longitudinal study that indicated older adults who had higher levels of conscientiousness, openness, or extraversion were more likely to live longer (Iwasa & others, 2022)
- Coverage of recent research that revealed older adults higher in conscientiousness experienced less cognitive decline (Graham & others, 2021)
- Discussion of recent research in which higher conscientiousness was associated with a decreased risk of transitioning from no cognitive impairment to mild cognitive impairment (Yoneda & others, 2022). High neuroticism was linked to increased risk of transitioning from no cognitive impairment to mild cognitive impairment.
- Description of recent research that found older adults higher in conscientiousness were more likely to report that it is important to have a purposeful retirement, while those higher in neuroticism were less likely to think this is important (Hill & others, 2022)
- Coverage of a recent British study of older adults that revealed following one year of COVID-19 restrictions, high levels of self-control and self-efficacy were linked to engagement in greater physical activity and experiencing fewer depressive symptoms (Camp & others, 2022)
- Discussion of a recent research review that indicated ageism was linked to older adults' having lower psychological well-being (Kang & Kim, 2022). However, older adults with a high level of psychological well-being were found to be less negatively affected by ageism, especially those who were proud of their age group, experienced less negative emotions, were more optimistic about aging and their future, were more self-confident about their bodies, and were flexible in setting goals.
- Inclusion of a recent research review on the health of older adults in 45 countries that concluded ageism led to worse health outcomes, especially in less-developed countries where people were less educated (Chang & others, 2020)
- Discussion of a recent large-scale study of 20 countries in which the United Kingdom was characterized by the highest ageism while Sri Lanka had the lowest ageism (Ng & Lim-Soh, 2021)
- Description of a recent analysis that concluded those over 70 years of age are increasingly being viewed as helpless, frail, and unable to contribute to society (Ayalon & others, 2021), and that such overgeneralizations are harmful and contradict the heterogeneous nature of aging and the continuing contributions older adults make to society
- New content indicating that it is important to keep in mind that for many Black American older adults who are poor, their poverty emerged over their life course, especially for those who repeatedly experienced discrimination, racism, less educational access, and other obstacles
- New commentary about generational inequity and the importance of remembering that older adults give back as caregivers, volunteers, and so on rather than just "taking" resources from younger people
- New commentary that older adults' reliance on the Internet increased significantly during the COVID-19 pandemic because for many older adults it was their main way of communicating with others
- Updated data indicating that in 2021, 75 percent of U.S. adults 65 years of age and over were using the Internet, up from 59 percent in 2013 and 14 percent in 2000 (Statista Research Group, 2022)
- Updated data indicating that in 2021, 61 percent of U.S. adults 65 years of age and older were smartphone users, compared with 46 percent in 2018 and 30 percent in 2015 (Statista Research Group, 2022)
- Coverage of a recent study of older adults that revealed increased Internet use was associated with decreased loneliness (Yu, Wu, & Chi, 2021)
- Description of recent research in which remarried, cohabiting, divorced/separated, and widowed older adults were

characterized by greater epigenetic aging than continuously married older adults (Yu, 2022)

- Inclusion of a recent study of married Mexican older adults that found experiencing more spousal support was associated with less loneliness while experiencing spousal strain was linked to more loneliness three years later (Saenz, 2021)
- Discussion of how some older adults live with their one and only spouse while increasing numbers of older adults are divorcing, remarrying, cohabiting, or living alone (Carr & Utz, 2020)
- Description of recent research on persons 50 years and older in which divorced women experienced a 45 percent decline in their standard of living (measured by an income-to-needs ratio) while men's standard of living declined only 21 percent (Lin & Brown, 2021). Remarriage improved the standard of living for women but not men (Lin & Brown, 2021).
- Coverage of a study of adults 65 years of age and older that indicated those who were divorced engaged in fewer conversations throughout the day than their married counterparts, although they did converse more with friends (Ng & others, 2021b)
- Inclusion of a recent Polish study of adults 65 years of age and older that found divorced women and men were more likely to commit suicide than their married counterparts (Smigielski & others, 2021)
- New content on the increasing percentage of older adults who are living apart together (LAT), which involves being in an intimate relationship but choosing to live separately for financial reasons, personal reasons, or both, with approximately 7 percent of older adults in the United States being in LAT relationships (Carr & Utz, 2020)
- Inclusion of a recent study that confirmed adult daughters are more supportive of their older parents than adult sons are, with more support given when older parents are in poor health (Herrera & Fernandez, 2022)
- Description of a study of older adults that revealed social support improved the mental health of those with chronic physical problems (Yang & D'Arcy 2021)
- Coverage of a recent study in which older adults with a greater diversity of social networks, regardless of perceived quality of social support, had better health-related quality of life (Rhee, Marottoli, & Monin, 2021)
- Inclusion of a recent study of older adults that indicated loneliness was associated with depressive symptoms (Lee & others, 2021)
- Discussion of a recent study in which volunteering was associated with increased self-esteem and autonomy (Kleiner & others, 2021)
- Inclusion of a recent Australian study that found older adults who engage in volunteering roles that (a) they consider not to be overwhelming, (b) fulfill their desire to volunteer for a cause about which they are genuinely concerned, and (c) involve activities they perceive to be meaningful produce the most favorable psychological outcomes such as life satisfaction (Jongenelis & others, 2022)
- New content indicating that volunteering may improve older adults' well-being or their well-being may improve the likelihood they will engage in volunteering

- Description of a recent study of lesbian and gay older adults that revealed those who volunteered had better physical health, more positive mental health, and less psychological distress than non-volunteers (Lyons & others, 2021)
- New *Connecting Through Research* feature highlighting research that revealed volunteering for 100 hours or more per year was related to having more positive and less negative self-perceptions of aging 4 years later, which in turn was linked to having fewer depressive symptoms (Huo & others, 2021)
- New discussion indicating that underrepresented ethnic groups' lack of access to health care means later detection of their illness/disease and thus higher mortality
- Coverage of a recent study of older adult Black Americans that found everyday discrimination was associated with higher levels of hopelessness and that religiosity helped to reduce their hopelessness (Mitchell & others, 2021)
- Discussion of a recent study of more than 40 million middle-aged and older adult Black American and non-Latino women and men in which workplace discrimination was highest for Black American women (25 percent) and lowest for non-Latino White men (11 percent) (Fekedulegn & others, 2019)
- Description of a recent study that indicated living in collectivist countries was associated with less age bias and greater feelings of warmth toward older adults compared with living in individualist countries (Ackerman & Chopik, 2021)

Chapter 20: Death, Dying, and Grieving

- New discussion of how wars, famines, and other tragic circumstances can significantly increase the occurrence of death
- New content on the COVID-19 pandemic and how it made Americans acutely aware of death, as more than 800,000 Americans had died of the virus between the spring of 2020 and the end of 2021
- Updated statistics from a 2020 Gallup poll indicating that 45 percent of Americans reported they have a living will, a slight increase from 40 percent in 2005 (Jones, 2020)
- Updated data noting that POLST (Physicians Orders for Life Sustaining Treatment) is now available in some form in all 50 states and Washington, D.C.
- Updated list of states that allow assisted suicide, with New Mexico added in 2021
- Updated Gallup poll that indicated 72 percent of U.S. adults said euthanasia should be legal, and 54 percent reported that physician-assisted suicide is morally acceptable (Brennan, 2018)
- Updated data indicating that in 2020, a national survey found that 83 percent of hospitals with 50 or more beds provided palliative care, up from 25 percent in 2000, 53 percent in 2008, and 67 percent in 2015 (Center to Advance Palliative Care, 2022)
- Inclusion of a recent study of cancer patients in palliative care that revealed they mainly received help for their pain (86 percent), lack of appetite (65 percent), and nausea (74 percent) (Bagcivan & others, 2022). They reported that their most frequent unmet needs were problems with

concentration (70 percent), worrying (68 percent), difficulties with sex life (64 percent), limitations in work and daily activities (62 percent), and being depressed (59 percent).

- Discussion of a recent U.S. national study of older adults that revealed 39 percent died at home, 33 percent in a hospital, and 28 in a nursing or hospice facility (Lei & others, 2021)
- Coverage of a recent study in which support from friends and family was more beneficial to children and adolescents whose parent died of cancer than were support from schools and health-care personnel (Holm & others, 2022)
- Inclusion of a recent study that found family support, religion, meaning-making coping, exercising, and journal writing helped adolescents adjust better and cope more effectively following the death of a parent (Ludik & Greeff, 2022)
- Description of a recent German study that indicated difficulty accepting the loss was the most frequent symptom linked to prolonged grief disorder following a death (Rosner & others, 2021)
- Coverage of a recent study in which 13.4 percent of college students who experienced a significant death loss developed prolonged grief disorder (Glickman, 2021)
- Discussion of a recent study of almost 3,000 older adults that revealed prolonged grief disorder was linked to depressive symptoms, sleep disturbances, reduced life satisfaction, and lower quality of life. Predictors of prolonged grief disorder were being a woman; less time since the death; experiencing more losses; losing a child, partner, or sibling; and receiving less social support (Trembl & others, 2022).
- New *Connecting Through Research* feature on a study that found more grief severity by bereaved adults when a loss occurred during the COVID-19 pandemic than before it (Eisma & Tamminga, 2020)
- Inclusion of new content on the grief associated with death during the COVID-19 pandemic (Ramadas & Vijayakumar, 2021)

- Discussion of a recent study of adults who experienced an increased risk of suicide after a first-degree relative died suddenly (Hamdan & others, 2020)
- Coverage of a recent study that revealed experiencing the death of a child prior to midlife is associated with depressive symptoms among older adults (Jung & Lee, 2022)
- Updated data indicating that in 2019, 30 percent of U.S. women 65 years of age and older were widowed, compared with only 10 percent of men this age (Administration for Community Living, 2021)
- Description of a recent analysis that revealed a spouse's death affected women and men differently (Streeter, 2020), with women experiencing a 22 percent decline in income in the two years following the death of a spouse, while men's financial status stayed relatively stable but their emotional and mental health worsened following spousal death due to loneliness and depression
- Inclusion of a recent research review that found the following interventions improved widows' lives (Davidow & others, 2022): mindfulness techniques in a group format for improving emotional and life satisfaction outcomes; an individual, writing-based emotional expression therapy for short-term improvement in emotion and function; the drug nortriptyline for the treatment of bereavement-related major depressive disorder; an Internet-based cognitive behavior intervention for prolonged grief; and pharmacotherapy for cardiovascular problems during bereavement
- Updated data indicating that in the United States in 2021, 57.5 percent of deaths were followed by cremation, which is a significant increase from a cremation rate of 14 percent in 1985 and 27 percent in 2000 (Cremation Association of North America, 2022). In Canada in 2020, 74.8 percent of deaths were followed by cremation.

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