

ANTH 369: HUMAN GROWTH & DEVELOPMENT
Fall Quarter 2009
4 credit hours (Satisfies an SC requirement)

Course Time & Location: MW 12:00-1:50 pm in 142 Straub

Instructor: Dr. Josh Snodgrass

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PREREQUISITE

None (but ANTH 270 or equivalent recommended)

COURSE DESCRIPTION

Examines key issues in human and nonhuman primate growth and development; addresses genetic, social, and ecological determinants of variation in growth.

COURSE CONTENT

This is a science group satisfying course that examines key issues in human growth and development, focusing particular attention on human physical growth. In this course, human growth and development is viewed as a biocultural process that demands an integrated analysis. This course uses a scientific approach, drawing on the methods, theories, and bodies of knowledge from various scientific disciplines, including evolutionary biology, genetics, neuroscience, physiology, nutritional sciences, and medicine.

This course has **three main sections**:

Section 1 builds the framework for understanding human growth and development. This section begins by providing an historical overview of growth studies, focusing particular attention on developments during the 20th century. This is followed by discussions of the scientific method and evolutionary theory, with particular attention directed towards the adaptation concept and life history theory. This comparative evolutionary perspective on human growth incorporates studies of living primates and fossil human ancestors.

Section 2 focuses on the basic principles of human growth and development, from conception through adulthood. For each life stage, the major shifts in anatomy, physiology, and brain development are discussed. This section also covers techniques for assessing human growth status and the application of the knowledge of patterns of growth and development to bioarchaeology and forensic anthropology.

Section 3 focuses on variation in human growth and development. Beyond simply describing differences in growth and development within and between groups, this course uses a biocultural framework that incorporates genetic, social, and ecological factors to explain why these patterns of variation exist. This section spends considerable time on illustrating how specific dietary factors, disease exposure, and parenting practices can shape variation in growth and development.

COURSE FORMAT

The course format will consist of lectures and directed class discussions.

BLACKBOARD

A blackboard site will be maintained for this class, which will be your main source for course information, documents, and announcements. Make sure that you regularly check your Blackboard-linked e-mail account.

ACCOMMODATIONS

Appropriate accommodations will be provided for students with documented disabilities. Please make arrangements to meet with me or your GTF to discuss these accommodations.

REQUIRED READINGS

Assorted articles and book chapters (see below). All required readings will be made available on Blackboard.

EVALUATION METHOD

Your grade in the course will reflect your performance on a midterm exam, final exam, and three short (2-3 page each) reaction papers, as well as submission of weekly questions on the assigned readings.

Midterm Exam (Monday, November 2)	30%
Final Exam (Wednesday, December 9)	30%
Reaction Papers (3 total; choose 3 from the 6 possibilities)	30%
Reading Questions (3 questions due each week, except week 1)	10%

Exams: The midterm and final exams will be based on lectures, videos, readings, and class discussions, and will include objective (multiple choice & matching), fill-in-the-blank, short answer, and short essay sections. The final exam will emphasize the material from the second half of the class, but it will also require integration of course material from throughout the course (not just the material introduced after the midterm).

Exams must be taken at the scheduled time. Under no circumstances will make-up exams be given without a documented excuse (e.g., signed note from your doctor). If you will not be able to take an exam, you must notify me in advance (preferably by e-mail).

Reaction Papers: During the quarter, each student will write three short (2-3 page) reaction papers on articles provided by the instructor (see "Special Topics" on the schedule). These response papers provide opportunities for discussion and critical analysis of current biological, cultural, and social issues related to human growth and development. Reaction papers are only 2-3 pages long so writing should be concise and focused around a couple of main points.

Reading Questions: Once per week, each student will upload three short discussion questions onto Blackboard. These questions should be drawn from the assigned readings for the week. Please submit questions the night before either Monday or Wednesday's class. We may use these questions in class to help foster discussion.

A NOTE ABOUT GRADE DEFINITIONS

The grading system used in this course is as follows:

- A** – Outstanding performance relative to that required to meet course requirements; demonstrates a mastery of course content at the highest level.
- B** – Performance that is significantly above that required to meet course requirements; demonstrates a mastery of course content at a high level.
- C** – Performance that meets the course requirements in every respect; demonstrates an adequate understanding of course content.
- D** – Performance that is at the minimal level necessary to pass the course but does not fully meet the course requirements; demonstrates a marginal understanding of course content.
- F** – Performance in the course, for whatever reason, is unacceptable and does not meet the course requirements; demonstrates an inadequate understanding of the course content.

SCHEDULE

Week	Date	Topics	Reading Assignment
1	9/28 9/30	No Class – Yom Kippur Introduction and course overview; Why study growth?; Why take an comparative, evolutionary perspective?	Bogin 1999 (Introduction) Nesse & Williams 1998 Ward 2009
2	10/5 10/7	Historical perspective on human growth studies; Human growth in evolutionary perspective Basic principles; growth & development across the life cycle; Methods for assessing growth and maturity **Discussion in Class on Special Topic I** Special Topic I: Genetic Screening—Choose Option # 1, 2, <u>or</u> 3 1) Check 2005 <u>AND</u> Sound Medicine Podcast; 2) Johnson 2003; <u>or</u> 3) Weil 2006 **REACTION PAPER DUE TODAY**	Tanner 1998 Bogin 2002 Chumlea & Guo 2002
3	10/12 10/14	Pregnancy & birth (Guest Lecture by Dr. Melissa Cheyney, OSU Anthropology) Neurological & motor development (Guest Lecture by Dr. Paul van Donkelaar, UO Human Physiology) Optional Video: The Secret Life of the Brain	Rosenberg & Trevathan 2001 Pike 2001 Eliot 2000
4	10/19 10/21	Prenatal growth & development; Embryology Video: The Miracle of Life Infancy; Breastfeeding **Discussion in Class on Special Topic II** Special Topic II: Co-Sleeping & SIDS (McKenna 2001 AND Braiker 2005) **REACTION PAPER DUE TODAY**	Berk 2008 (Ch. 3) Berk 2008 (Ch. 5, pp 164-193)
5	10/26 10/28	Childhood & juvenile growth; Why grow up? **Discussion in Class on Special Topic III** Special Topic III: Childhood Vaccination (McNeil 2002 <u>AND</u> Harris & O'Connor 2005 <u>AND</u> McNeil 2009) **REACTION PAPER DUE TODAY** Puberty; Adolescent growth; Reproductive maturity	Berk 2008 (Ch. 8, pp. 292-311) Berk 2008 (Ch. 11, pp. 410-426) Berk 2008 (Chapter 14)

SCHEDULE (CONTINUED)

Week	Date	Topics	Reading Assignment
6	11/2 11/4	Midterm Exam <i>Video: Raising Cain—Protecting the Emotional Life of Boys</i>	
7	11/9 11/11	Adulthood; Regulation of reproduction; Female Fecundity; Energetics and reproduction Female fecundity (cont'd); What's going on with men? **Discussion in Class on Special Topic IV** Special Topic IV: Boys and Girls Growing Up <i>Where Have the Men Gone? (BBC 2003 AND Gurian 2005) or For Girls, Be Yourself and Be Perfect Too (Rimer 2005)</i> **REACTION PAPER DUE TODAY**	Ellison 2003 Ellison 2001 (Chapter 6) Bribiescas 2001
8	11/16 11/18	Old age; Aging & senescence **Discussion in Class on Special Topic V** Special Topic V: The Future of Aging <i>The Future of Aging (University of Utah Podcast) or Why We Must Ration Health Care (Singer 2009)</i> **REACTION PAPER DUE TODAY** Variation in growth and development; Physiological vs. chronological age; Developmental plasticity; Ecological and environmental influences on growth	Wiley & Allen 2008 (Ch. 7) Stinson 2000 Godfrey & Hanson 2009
9	11/23 11/25	Interpopulation variation in human growth; Small but healthy?; Economic development & growth Intrapopulation variation in growth; Secular trends; Social and economic determinants of health; Obesity **Discussion in Class on Special Topic VI** Special Topic VI: Who is Responsible for Childhood Obesity? (Mann 2005 AND Cohen 2003 AND Leonhardt 2009) or Should We Legislate Behavior? (Farley & Cohen 2005) **REACTION PAPER DUE TODAY**	Schell & Knutsen 2002 Norgan 2002 Johnston 2002
10	11/30 12/2	Psychosocial stress, growth, and health <i>Video: Rx for Survival: A Global Health Challenge (Back to the Basics)</i> Applications: Forensic Anthropology, paleoanthropology, and bioarchaeology	Sapolsky 2004 Sapolsky 2005 Loth & Iscan 2000
11	12/9	Final Exam (Wednesday, December 9, 10:15-12:15)	

Anthropology 369: Human Growth and Development—Required Readings

Week 1

Bogin B. 1999. Introduction. In: Bogin B. Patterns of human growth (2nd Ed.). Cambridge: Cambridge University Press.

Nesse RM, Williams GC. 1998. Evolution and the origins of disease. *Scientific American* (Nov.): 86-93.

Ward P. 2009. What will become of *Homo sapiens*? *Scientific American* 300 (Jan.): 68-73.

Week 2

Tanner JM. 1998. A brief history of the study of human growth. In: Ulijaszek SJ et al. (eds.) The Cambridge encyclopedia of human growth and development. Cambridge: Cambridge University Press. p. 3-12.

Bogin B. 2002. The evolution of human growth. In: Cameron N (ed.), Human growth and development. Amsterdam: Academic Press. p. 295-320.

Chumlea WC, Guo SS. 2002. The assessment of human growth. In: Cameron N (ed.), Human growth and development. Amsterdam: Academic Press. p. 349-362.

Week 3

Rosenberg KR, Trevathan WR. 2001. The evolution of human birth. *Scientific American* (Nov.): 80-85.

Pike IL. 2001. The evolutionary and ecological context of human pregnancy. In: Ellison PT (ed.) Reproductive ecology and human evolution. New York: Aldine de Gruyter, p. 39-58.

Eliot L. 2000. The basic biology of brain development. In: Eliot L. What's going on in there? How the brain and mind develop in the first five years of life. New York: Bantam. p. 11-39.

Week 4

Berk LE. 2008. Prenatal development (Chapter 3). In: Infants, children, and adolescents (6th edition). Allyn & Bacon. p. 92-127.

Berk LE. 2008. Physical development in infancy and toddlerhood (Chapter 5). In: Infants, children, and adolescents (6th edition). Allyn & Bacon. p. 164-193 ONLY.

Week 5

Berk LE. 2008. Physical development in early childhood (Chapter 8). In: Infants, children, and adolescents (6th edition). Allyn & Bacon. p. 292-311 ONLY.

Berk LE. 2008. Physical development in middle childhood (Chapter 11). In: Infants, children, and adolescents (6th edition). Allyn & Bacon. p. 410-426 ONLY.

Berk LE. 2008. Physical development in adolescence (Chapter 14). In: Infants, children, and adolescents (6th edition). Allyn & Bacon. p. 528-563.

Week 6

No assigned readings.

Week 7

Ellison PT. 2003. Energetics and reproductive effort. *American Journal of Human Biology* 15:342-351.

Ellison PT. 2001. Balancing act (Ch. 6). In: Ellison PT. On fertile ground: A natural history of human reproduction. Cambridge: Harvard University Press. p 167-214.

Bribiescas RG. 2001. Reproductive physiology of the human male: An evolutionary and life history perspective. In: Ellison PT (ed.) Reproductive ecology and human evolution. New York: Aldine de Gruyter, p. 107-135.

Week 8

Wiley AS, Allen JS. 2008. Aging (Ch. 7). In: Medical anthropology: A biocultural approach. Oxford University Press.

Stinson S. 2000. Growth variation: Biological and cultural factors. In: Stinson S et al. (eds.) Human biology: An evolutionary and biocultural perspective. New York: Wiley. p. 425-464.

Godfrey K, Hanson M. 2009. The developmental origins of health and disease. In: Panter-Brick C, Fuentes A. (eds.) Health, risk, and adversity. New York: Berghahn Books, p. 185-208.

Week 9

Schell LM, Knutsen KL. Environmental effects on growth. In: Cameron N (ed.), Human growth and development. Amsterdam: Academic Press. p. 165-196.

Norgan NG. 2002. Nutrition and growth. In: Cameron N (ed.), Human growth and development. Amsterdam: Academic Press. p. 139-164.

Johnston FE. 2002. Social and economic influences on growth and secular trends. In: Cameron N (ed.), Human growth and development. Amsterdam: Academic Press. p. 197-212.

Week 10

Sapolsky RM. 2005. Sick of poverty. *Scientific American* 293: 92-99.

Sapolsky RM. 2004. Dwarfism and the importance of mothers. In: Sapolsky RM. Why zebras don't get ulcers (3rd Ed.). New York: Henry Holt. p. 92-119.

Loth SR, Iscan MY. 2000. Morphological age estimation. In: Siegal JA et al. (eds.) Encyclopedia of forensic sciences. San Diego: Academic Press. p. 242-252.

Anthropology 369: Human Growth and Development—Special Topic Readings

Special Topic I (Week 2): Genetic Screening & Disability (Choose Option 1, 2, or 3)

Option 1: Check E. 2005. Screen test: A new technique could allow doctors to spot hundreds of potential genetic problems in unborn babies. But is it too soon to put it to use? *Nature* 438: 733-734.

AND

Sound Medicine. 2005. Podcast: Eugenics encyclopedia; Interview of RC Engs (<http://soundmedicine.iu.edu/>).

Option 2: Johnson HM. 2003. Unspeakable conversations. *The New York Times*; 2/16/03.

Option 3: Weil E. 2006. A wrongful birth? *The New York Times*. 3/12/06

Special Topic II (Week 4): Co-sleeping and Sudden Infant Death Syndrome (SIDS)

Braiker B. 2005. A quiet revolt against the rules on SIDS. *The New York Times*; 10/18/05.

McKenna JJ. 2001. Why we never ask: "Is it safe for infants to sleep alone?" *ABM News and Views* 7(4): 32, 38.

Special Topic III (Week 5): Childhood Vaccination

Harris G, O'Connor A. 2005. On autism's cause, it's parents vs. research. *The New York Times*; 6/25/05.

McNeil DG. 2002. When parents say no to child vaccinations. *The New York Times*; 11/30/02.

McNeil DG. 2009. Book is rallying resistance to the antivaccine crusade. *The New York Times*; 1/13/09.

Special Topic IV (Week 7): Boys and Girls Growing Up (Choose Option 1 or 2)

Option 1: BBC News. 2003. Girls top of the class worldwide: Women have overtaken men at every level of education in developed countries around the world. BBC; 9/16/03.

AND

Gurian M. 2005. Disappearing act: Where have the men gone? No place good. *Washington Post*; 12/4/05.

Option 2: Rimer S. 2007. For girls, it's be yourself, and be perfect, too. *The New York Times*; 4/1/07.

Special Topic V (Week 8): The Future of Aging (Choose Option 1 or 2)

Option 1: University of Utah (Genetic Science Learning Center). 2008. Podcast: The future of aging.

Option 2: Singer P. 2009. Why we must ration health care. *The New York Times*; 7/15/09.

Special Topic VI (Week 9): Who is Responsible for Childhood Obesity? and, Should We Legislate Behavior? (Choose Option 1 or 2)

Option 1: Cohen A. 2003. The McNugget of truth in the lawsuits against fast-food restaurants. *The New York Times*; 2/3/03.

Mann CC. 2005. Provocative study says obesity may reduce U.S. life expectancy. *Science* 307: 1716-1717.

Leonhardt D. 2009. Fat tax. *The New York Times*; 8/16/09

Option 2: Farley T, Cohen DA. 2005. Health, policies, and politics (Ch. 15) In: Prescription for a Healthy Nation. Boston: Beacon Press, pp. 221-241.