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**The 2008 Spring
Tucker Center
Distinguished Lecture**



THE 2007 TUCKER CENTER RESEARCH REPORT

Developing Physically Active Girls

An Evidence-based Multidisciplinary Approach



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TRENDS IN GIRLS' PHYSICAL ACTIVITY







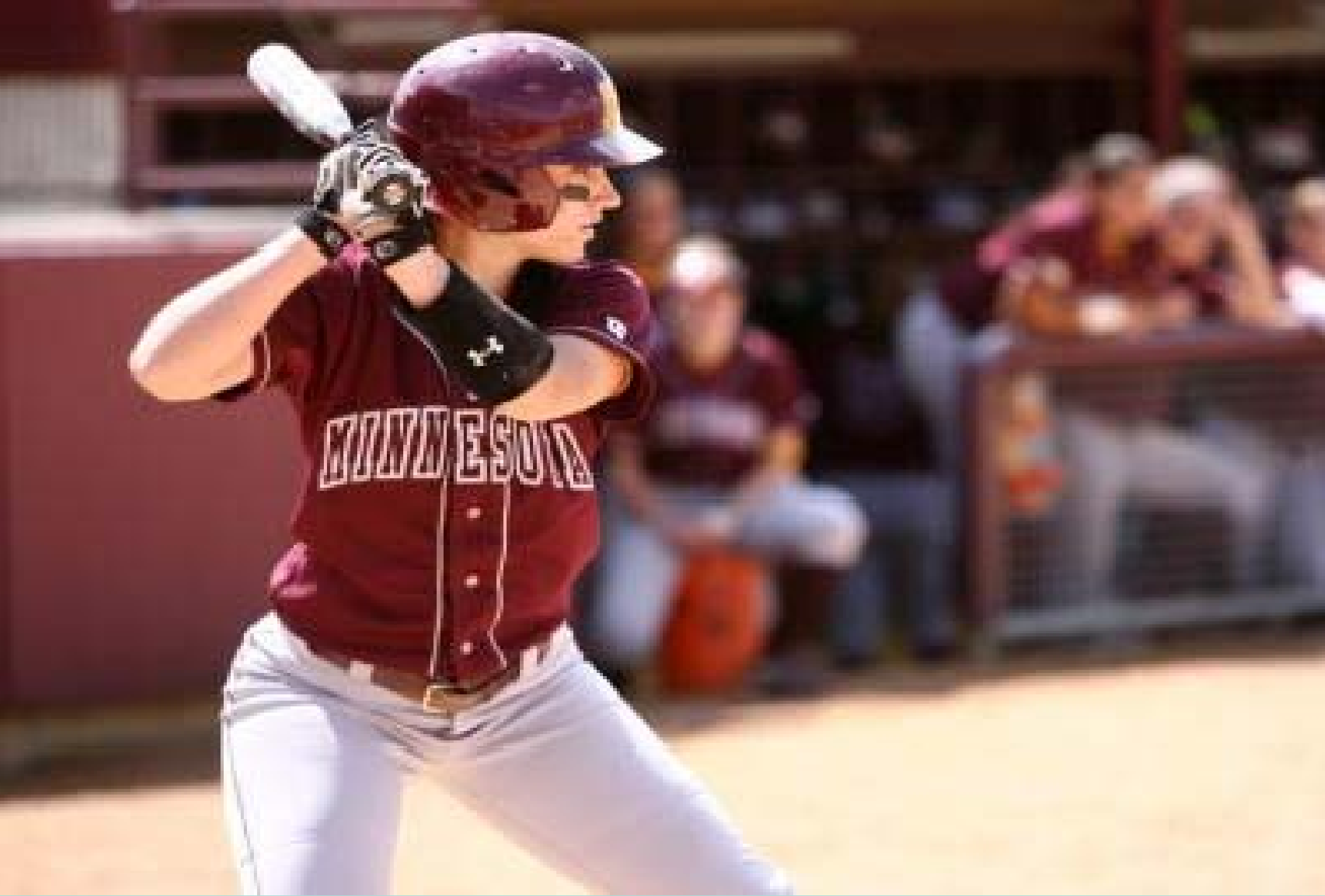
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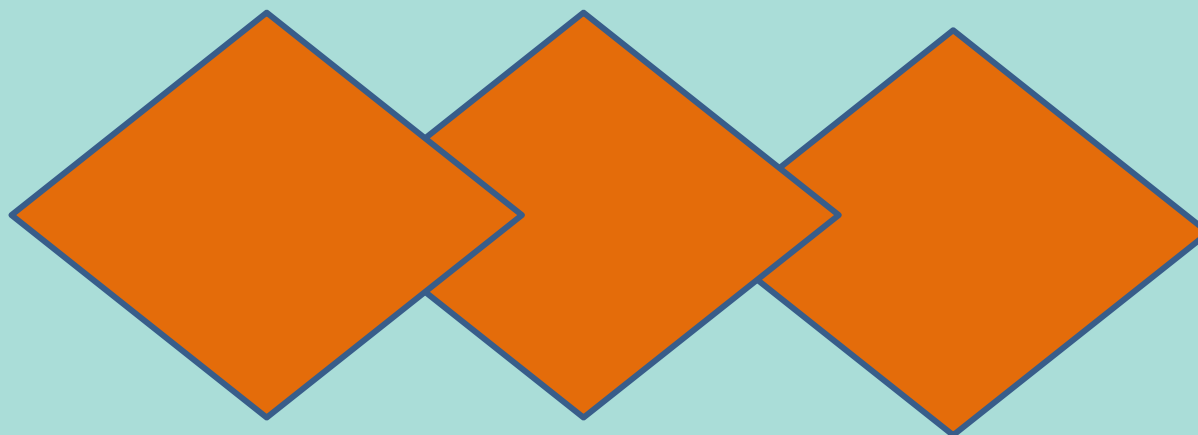
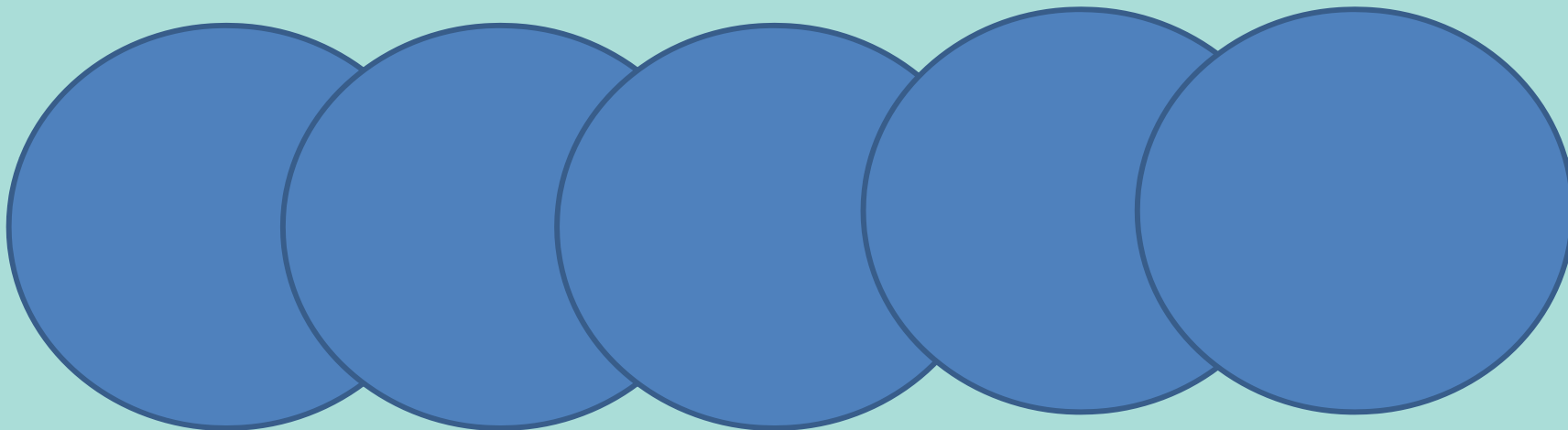
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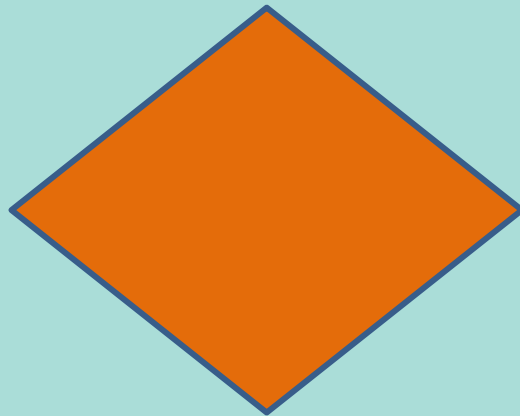
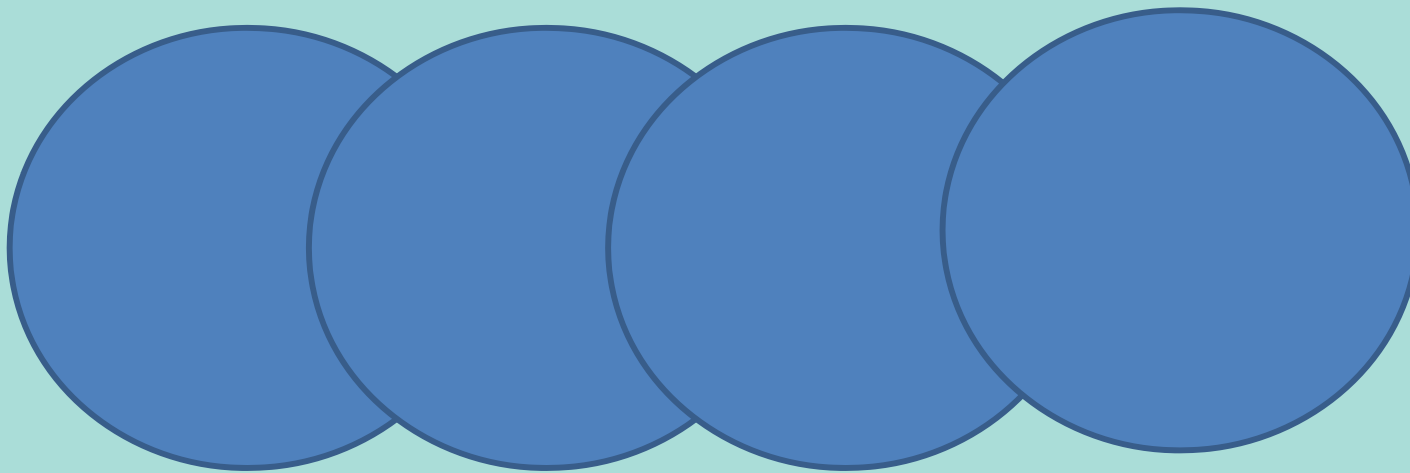
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Jeanne F. Nichols, Ph.D.
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PHYSIOLOGICAL & METABOLIC DIMENSIONS



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Topics

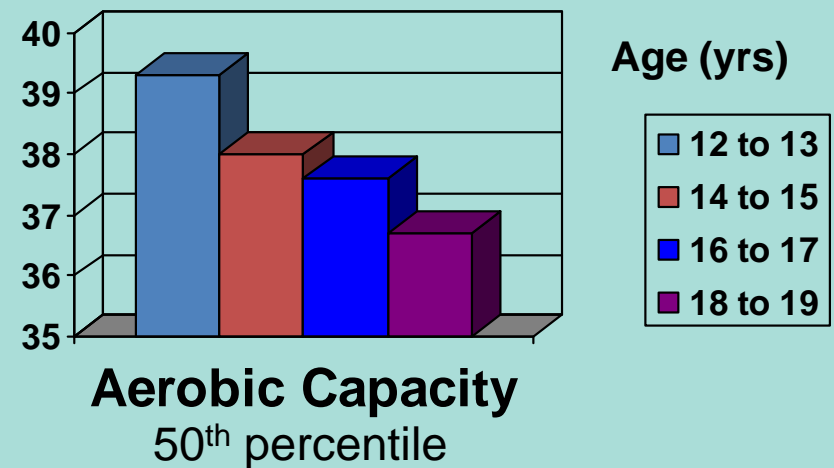
- Cardiorespiratory Fitness
- Muscular Strength & Power
- Chronic Disease Prevention
- Menarche
- Bone Health
- Female Athlete Triad



Cardiorespiratory Fitness

- Increased Longevity
- Weight Maintenance
- Health Benefits
 - Diabetes
 - Heart disease
 - Colon & breast cancer
- U.S. Fitness Levels
 - 1999-2000 NHANES
 - Treadmill testing
 - 7.5 million “low fit”

ml/kg/min



Muscular Strength & Power

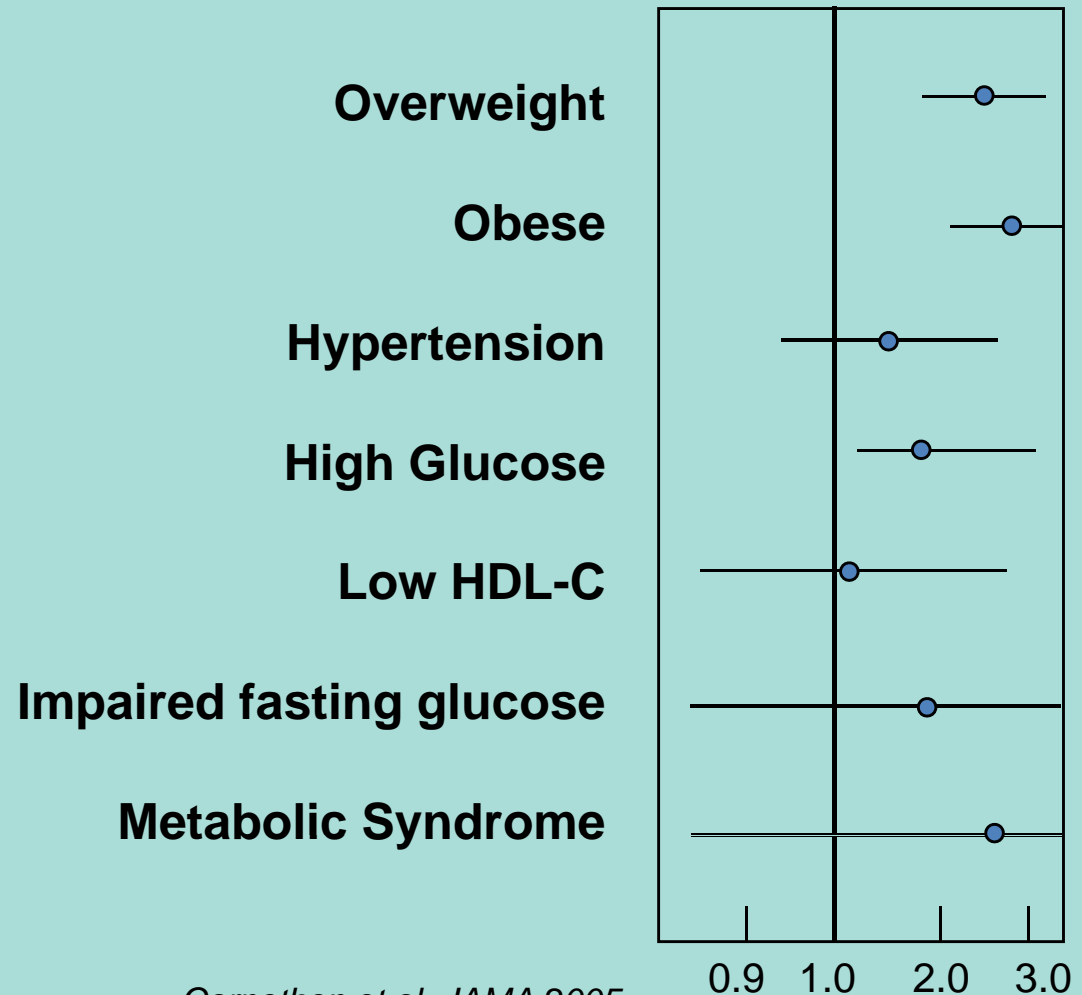
- Ability to generate force
 - Strength, Endurance, Power
- Health benefits
 - Weight control
 - Chronic disease prevention
- Increases through puberty
 - Decreases in sedentary
 - Maintained & increases in “actives”



Chronic Disease Prevention

- Type 2 diabetes
 - Almost ½ of new cases
 - 85% overweight
- CHD Risk Factors
 - 1999-2002 NHANES
 - Higher Fitness
 - 2 fold inc. overweight in lowest fitness

Odds with Low Fitness



Carnethon et al. JAMA 2005



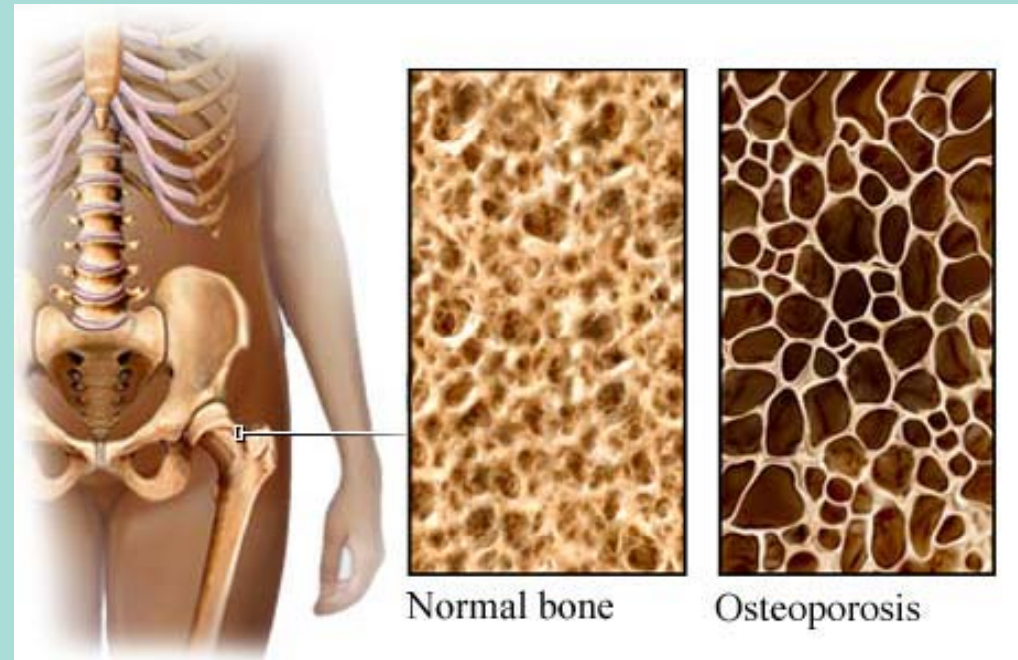
Menarche

- Onset is 12.4 years
 - Often delayed in active girls
 - Risk of menstrual dysfunction
- Early puberty
 - Weight gain
 - Concerning behaviors
 - Smoking/drinking
 - Body dissatisfaction
 - Eating disorders



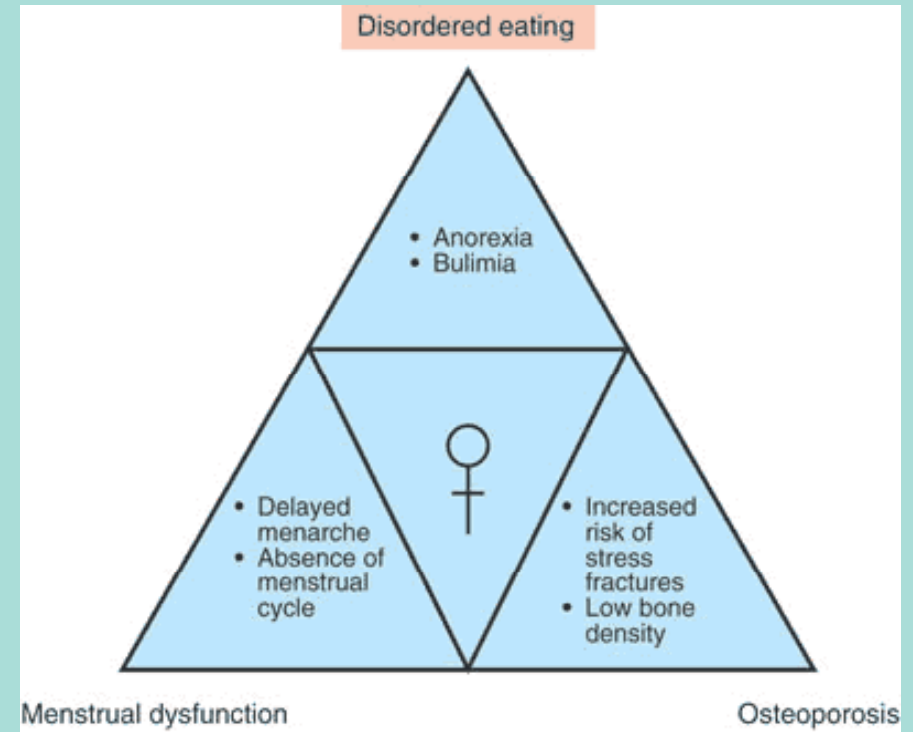
Bone Health

- Most important time to gain bone mass
 - 11-14 yrs is greatest
 - 90% by 17 yrs
- Need 3 things
 - Vitamin D
 - Calcium (1300 mg/d)
 - Physical Activity
 - 30, 45, 60 min/day



Female Athlete Triad

- Disordered Eating
 - Athletes 15-62%
 - General 13-20%
- Menstrual Dysfunction
 - No menses by 15 yrs
 - Irregular menses
 - Low energy intake
- Low Bone Mass
 - 22% not accruing bone as expected



Healthy Lifestyles



Margaret Carlisle Duncan, Ph.D.
University of Wisconsin-Milwaukee

SOCIOLOGICAL DIMENSIONS



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Sociological Dimensions

1997 vs 2007 report: The social construction of gender is still the most significant barrier to girls' participation in physical activity.

Gendering practices:

- The PE/PA curriculum
- Surveillance and objectification



Sociological Dimensions

The PE/PA curriculum

- The “problem with girls”
- The “hidden curriculum”
- Girls’ perspective

Designing girl-friendly physical activity programs



Sociological Dimensions

The surveillance and objectification of female bodies:

- The “beauty” ideal
- The intensification of surveillance at puberty

Challenging the culture of surveillance



Sociological Dimensions

Conclusion: Girls are not the “problem,” the gender order is:

- PE & PA are important sites for gendering
- Gender may be constructed otherwise



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PSYCHOLOGICAL DIMENSIONS



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Psychological Dimensions



Girls' **actions, thoughts, and feelings** related to physical activity contexts



Nature of **reciprocal influence** between girls and physical activity that occurs through social, cognitive, affective and behavioral mechanisms



What girls **DO** (Chapter 1), **THINK, AND FEEL** (Chapter 2), in physical activity **CLIMATES** (Chapter 2)





SELECT FINDINGS: PSYCHOLOGY





Cognitions:

What do girls think about physical activity?



Are Girls Interested?

- **Interest and importance** that girls place on physical activity influence current and future activity choices (Fredricks & Eccles, 2004)
- **Perceived importance** of physical activity is a stronger predictor of participation than interest (Fredricks & Eccles, 2002; 2005)
- Girls are as **“interested”** in sport and **physical activity** but see it as somewhat **less “important”** in their lives than do boys



Why Do Girls Participate?

- **Why youth participate in sport:** (Weiss & Ferrar-Caja, 2002)
 - physical competence or adequacy
 - social acceptance and approval
 - enjoyment
- **Why youth **stop** participating in sport:** (Weiss, 2000; Weiss & Ferrar-Caja, 2002)
 - not developing or demonstrating competence
 - not feeling socially accepted
 - not enjoying experience or having fun
 - being harmed (e.g., injury, hurt esteem, hurt feelings)



How Competent Do Girls Feel?

- **Age**

- Younger children more optimistic, older children more realistic in physical competence evaluations



- **Gender**

- From early childhood through adolescence girls perceive themselves as less physically competent than boys





Affect:

What do girls feel about physical activity?



Do Girls Enjoy Physical Activity?

- **Fun** is most prevalent reason children and youth give for participating in sport (PCPFSR,1997)
- **Enjoyment:**
 - Includes optimal challenge, mastery, social connection, intrinsic pleasure, positive reactions from others, skill improvement
 - Is strongest predictor of sport commitment (Weiss, 2003)
- **Task orientation** linked to greater enjoyment (Vlachopoulos et al., 1997)
 - Value personal improvement and task mastery



What Aspects are Stressful for Girls?

- **Antecedents of state anxiety**
 - Personal: high trait anxiety, low self-esteem, low confidence, low perceived ability
 - Situational: individual sports, losing, more parental pressure, greater situation importance, ego-oriented climates
- **Antecedents of burnout**
 - Excessive performance expectancies, limited control over one's sport participation, perceptions of stress and anxiety



What Are the Cognitive and Emotional Benefits?

- **Mental health**
 - Regular physical activity of benefit to mental health (Steiner et al., 2000)
- **Treatment adjunct**
 - Regular physical activity important adjunct to mental health treatment for depression, anxiety
- **Cognitive functioning**
 - Regular physical activity linked to improved general cognitive functioning (Etnier et al., 1997)



Social Climates: How do they affect girls?



Parent Climates



How Do Fathers Affect Girls?

- Fathers influence daughters' **sport competence and value beliefs** more than mothers (Fredricks & Eccles, 2002)
- **Types of influence** affect consequences for daughter
 - Female soccer players who perceived fathers to be involved but exerting low amounts of pressure reported greater enjoyment and motivation for soccer participation than girls who perceived high pressure and involvement from own fathers (Babkes & Weiss, 1999)
- Involvement of fathers typically takes more **direct and active** role (e.g., as coach) (Fredricks & Eccles, 2005)
 - 27% of fathers coached their child's sport team
 - < 4% percent of mothers coached their child's team



How Do Mothers Affect Girls?

- Mothers more often parent most **closely** associated with daughter's sport participation and typically ones to first **enroll** her in sport programs
 - Davison, Cutting, & Birch (2003); Green & Chalip (1997); Weiss & Hayashi (1995); Wolfenden & Holt (2005)
- Mothers engage in significantly more **logistic support** than do fathers
 - E.g., mothers provide transportation, uniforms and apparel, snacks, team manager
- Girls **want female role models**, would benefit from “active role” mothers



Leader Climates



How Do Ego Involving Leader Climates Affect Girls?

- Characterized by:
 - **punishment** for mistakes and poor performance
 - differential treatment of and **favoritism** toward high-ability participants
 - excessive **competition** among participants
- Related to **undesirable** psychological consequences: (Smith et al., 2005)
 - greater anxiety
 - lower enjoyment and satisfaction
 - more negative relationships with others in the physical activity environment



How Do Task Involving Leader Climates Affect Girls?

- Characterized by:
 - leader reinforcement for **improvement and effort**
 - peer **support**
 - belief in the **value and role of all** participants
- Related to **desirable** psychological outcomes:
(Galloway, 2003; Smith, Fry, Ethington, & Li, 2005)
 - greater enjoyment
 - greater satisfaction
 - intrinsic motivation
 - positive relationships in physical activity environment
 - less anxiety



Peer Climates



What Kinds of Sport Friendships Do Girls Have?

- **Related to:**
 - self-perceptions, enjoyment, and motivated behavior in physical activity (Smith, 2003; Weiss & Stuntz, 2004)
- **Dimensions include:**
 - self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, conflict resolution, conflict (McDonough & Crocker, 2005; Weiss & Smith, 1999)
- **Desired qualities:** (Weiss et al., 1996; Weiss & Smith, 2002)
 - Girls somewhat more so than boys cite supportiveness, emotional support as important dimensions of friendship quality



What Should Peers Do?

- **Support each other**
 - Young people who perceive greater support for their physical activity from their friends are more active (Duncan, Duncan, & Strycker, 2005)
- **Watch each other**
 - Having parents, siblings, and friends watch sport participation is motivating (Duncan et al., 2005; Shields, Bredemeier, LaVoi, & Power, 2005)
- **Recognize each other's accomplishments**



Summary of Findings: Girls...



Love physical activity experiences and through them develop important relationships and competencies



Enjoy the challenges of and gain confidence through being physically active in optimal climates



Appreciate the camaraderie and fun inherent in physical activity, but rely on competent adult leaders to create high quality, positive experiences



Suffer negative psychological consequences if those leaders do not use their power wisely to meet girls' developmental needs



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RECOMMENDATIONS FOR BEST PRACTICES, PROGRAMS, POLICIES, AND FUTURE RESEARCH

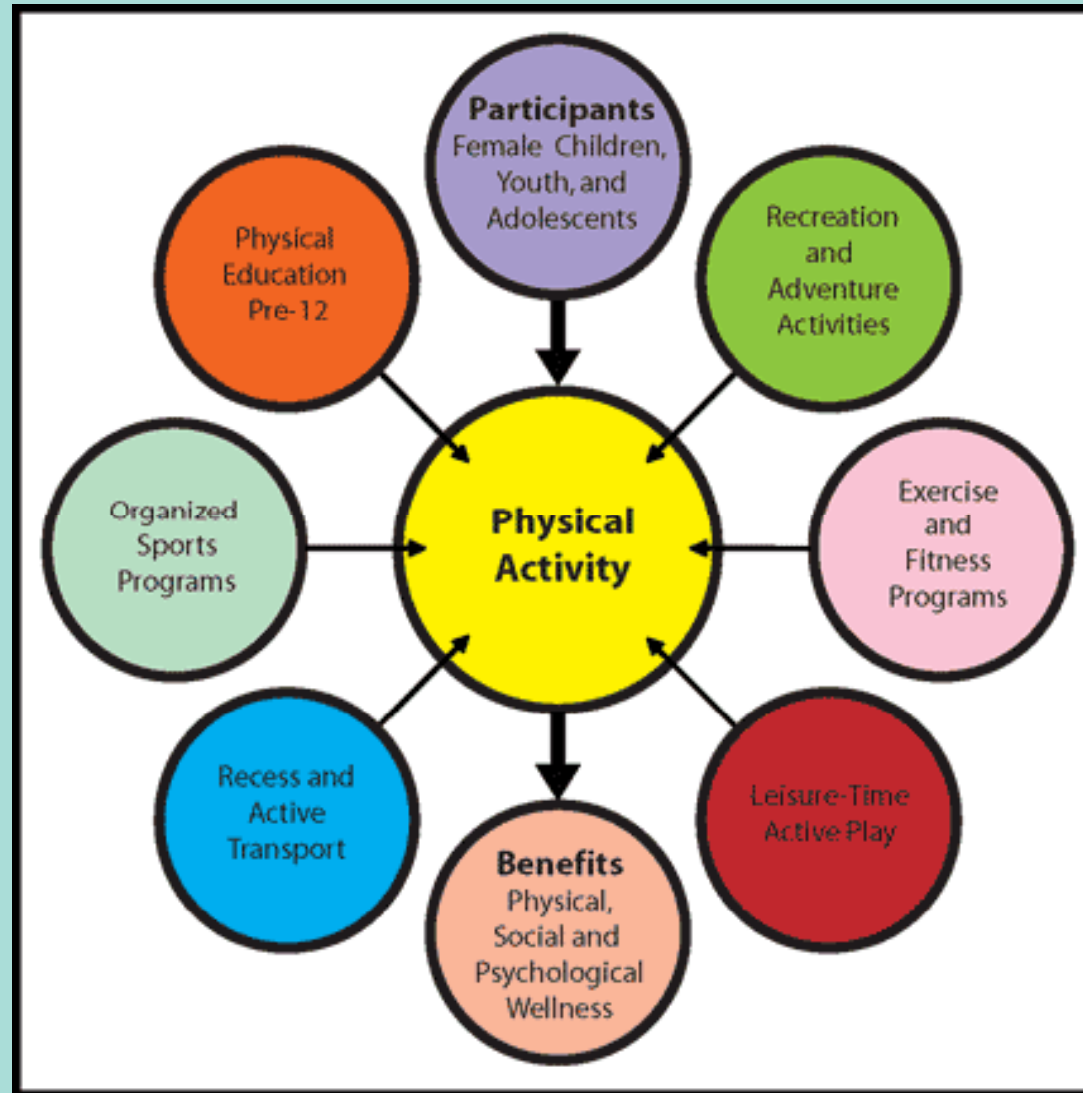




BEST PRACTICES



Encourage Multiple PA Sources



Create Optimal PA Contexts



Build Positive Outcomes Through PA

Physical Assets

Physical health

Health- and performance-related physical fitness

Physiological capacities

Motor skill competencies and movement literacy

Physical activity competencies

Physically active lifestyles

Knowledge about physical activities, sports, and games

Psychological Assets

Commitment to physical activity

Positive values toward physical activity

Interpersonal competencies, teamwork, cooperation

Positive body image and physical identity

Mental health, positive affect and stress relief

Cognitive functioning and intellectual health

Social Assets

Support from significant others

Social capital and social ties

Learning and empowerment

Boundaries and expectations

Constructive use of time for active living

Healthy social identity





PROGRAMS



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Sample Programs



Program or Approach	Context or Focus	Sponsor or Source
VERB Campaign	Increase PA among Tweens	USDHHS, CDC
Action Schools! BC	School Action Plans	British Columbia
GoGirlGo!	Wellness Curriculum	Women's Sports Foundation
GirlSports	Teaching Sport Skills	Girl Scouts USA
Girl Power!	Healthy Lifestyles	USDHHS
New Moves	Alternative PE Program	U of M, Sch. of Public Health
LEAP	School Based Intervention	CSHP model of CDC
TAAG	School & Community Interv.	Multiple testing sites
First Tee	Development, Life Skills	USGA
Girls on the Run (GOTR)	PYD through Running	Nonprofit





POLICIES & FUTURE RESEARCH





Policies & Research



Policies

- Legislation
 - PLAY Everyday Act
 - FIT Kids Act
- Reports
 - Healthy People 2010
 - Building “Generation Play”
- Conferences & Summits
 - Action Summit on Obesity, Mayo Clinic
 - Physical Activity in Contemporary Education Conference

Future Research

- Early participation influences on lifespan PA
- Physical activity and cognitive performance
- Outcomes of girl-focused or girl-only programs
- Alternative curricular models of PE
- Longitudinal impact of girls’ PA on health & chronic disease





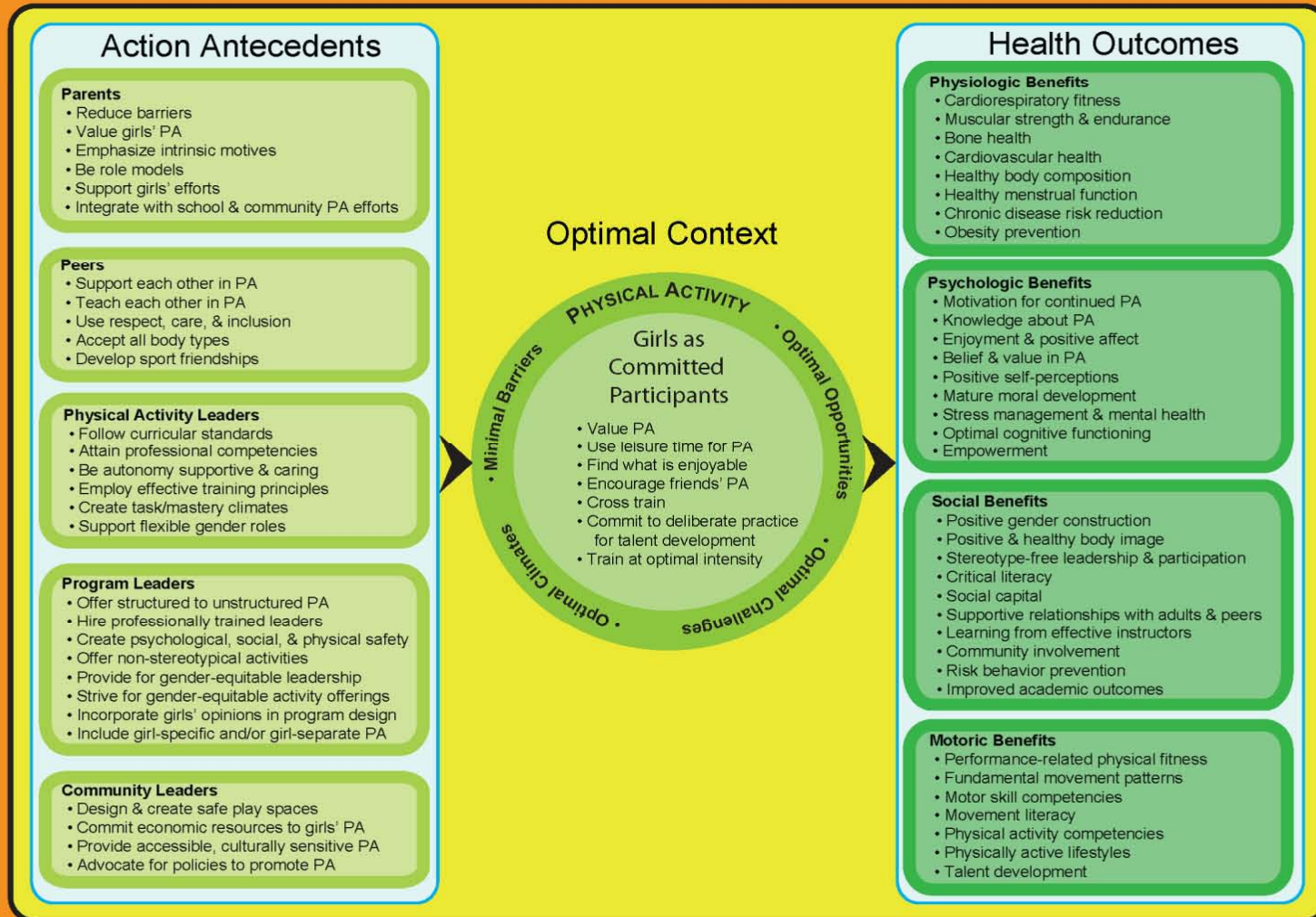
MULTIDISCIPLINARY MODEL: EVIDENCE-BASED APPROACH





Developing Physically Active Girls

An Evidence-based Multidisciplinary Approach



An Evidence-based Multidisciplinary Model for Developing Physically Active Girls

Wiese-Bjornstal, D.M., & LaVoi, N.M. (2007). Chapter 5: Girls' physical activity participation: Recommendations for best practices, programs, policies, and future research. In M.J. Kane & N.M. LaVoi (Eds.), *The 2007 Tucker Center Research Report, Developing physically active girls: An evidence-based multidisciplinary approach* (pp. 63-90). Minneapolis, MN: The Tucker Center for Research on Girls & Women in Sport, University of Minnesota.

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