TRENDS IN GIRLS’ PHYSICAL ACTIVITY
Physical Activity

Participants
- Female Children, Youth, and Adolescents
- Recreation and Adventure Activities
- Exercise and Fitness Programs
- Physical Education Pre-12
- Organized Sports Programs
- Recess and Active Transport
- Leisure-Time Active Play

Benefits
- Physical, Social and Psychological Wellness

Tucker Center for Research on Girls & Women in Sport
Jeanne F. Nichols, Ph.D.
Kelley K. Pettee, Ph.D.
Barbara E. Ainsworth, Ph.D., MPH
Arizona State University

PHYSIOLOGICAL & METABOLIC DIMENSIONS

Tucker Center for Research on Girls & Women in Sport
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”

Aerobic Capacity 50th percentile

- 12 to 13
- 14 to 15
- 16 to 17
- 18 to 19
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

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

Tucker Center for Research on Girls & Women in Sport
Healthy Lifestyles
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
Conclusion: Girls are not the "problem," the gender order is:

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

Tucker Center for Research on Girls & Women in Sport
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.
Diane Wiese-Bjornstal, Ph.D.
Nicole M. LaVoi, Ph.D.
University of Minnesota

RECOMMENDATIONS FOR BEST PRACTICES, PROGRAMS, POLICIES, AND FUTURE RESEARCH
BEST PRACTICES
Encourage Multiple PA Sources
Create Optimal PA Contexts

Optimal Climates

Optimal Challenges

Optimal Opportunities

Minimal Barriers

Girls’ Engagement in Physical Activity
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
# Sample Programs

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

The 2008 Spring Tucker Center Distinguished Lecture

Developing Physically Active Girls
An Evidence-based Multidisciplinary Approach