

**Supplementary Table 1:** Individual Speakers and Organizations Participating in AMSSM Youth Early Sport Specialization Research Summit

<b>Invited Speakers*</b>		
David R. Bell, PhD, ATC	Avery D. Faigenbaum, EdD	Robert M. Malina, PhD
Anthony I. Beutler, MD	Tom Farrey, BA	Stephen W. Marshall, PhD
Joel S. Brenner, MD, MPH	Glenn S. Fleisig, PhD	Alicia M. Montalvo, PhD, ATC
M. Alison Brooks, MD, MPH	Brian Hainline, MD	Gregory D. Myer, PhD
R. Dawn Comstock, PhD	Daniel C. Herman, MD, PhD	Kyle B. Nagle, MD, MPH
David Conant-Norville, MD	Mackenzie M. Herzog, PhD, MPH	Vicki R. Nelson, MD, PhD
Jean Côté, PhD	Neeru Jayanthi, MD	Andrea Stracciolini, MD
Kristen D. Dieffenbach, PhD	Stephanie A. Kliethermes, PhD	Adam S. Tenforde, MD
John P. DiFiori, MD	Mininder S. Kocher, MD	Andrew M. Watson, MD, MS
Brooke de Lench, BA	Cynthia R. LaBella, MD	
<b>Organizations Represented</b>		
American Academy of Pediatrics	Mom's Team	
American Academy of Physical Medicine and Rehabilitation	National Athletic Trainers' Association	
American College of Emergency Physicians	National Basketball Association	
American College of Sports Medicine	National Collegiate Athletic Association	
American Medical Society for Sports Medicine	National Institutes of Health	
American Orthopaedic Society for Sports Medicine	National Strength and Conditioning Association	
Association of Tennis Professionals	President's Council on Sports, Fitness & Nutrition	
Aspen Institute	United States Center for Coaching Excellence	
Datalys Center for Sports Injury Research and Prevention	United States Tennis Association	
International Society for Sports Psychiatry	USA Gymnastics	
Major League Baseball	USA Swimming	
Major League Soccer		

**\*Note:** All invited speakers were from the USA, except for Dr. Jean Côté who resides in Canada. The Summit planning committee attempted to achieve gender and racial/ethnic diversity when inviting speakers with expertise in areas related to youth sport specialization to participate in writing groups and as panelists. Although gender parity was attained, appropriate racial/diversity representation was more difficult to achieve. This was in part due to personal and professional circumstances at the time of the Summit. The planning committee did provide 2 competitive travel scholarships for the Summit to underrepresented minorities to encourage continued participation in the event and in this area of research.

## Supplementary Table 2: AMSSM Youth Early Sport Specialization Summit (YESSS) Leadership

### American Medical Society for Sports Medicine (AMSSM) Leadership

Executive Director	Jim D. Griffith, MBA, CAE, <i>AMSSM- Leawood, Kansas</i>
Chair of CRN Leadership Team	Anthony I. Beutler, MD, <i>Intermountain Healthcare</i>
AMSSM Research Director	Stephanie A. Kliethermes, PhD, <i>University of Wisconsin-Madison</i>
Research Conference Co-Chair	Stephen W. Marshall, PhD, <i>University of North Carolina-Chapel Hill</i>
Research Conference Co-Chair	Daniel C. Herman, MD, PhD, <i>University of Florida</i>
Research Conference Co-Chair	Neeru Jayanthi, MD, <i>Emory University</i>

### Research Conference Writing Group Committees

Impact of youth sport specialization on child and athlete performance and development <b>(Writing Group #1)</b> <b>Neeru Jayanthi, MD§*</b> <i>Emory University</i> <b>Kyle B. Nagle, MD §*</b> <i>Seattle Children's Hospital</i> <b>Jean Côté, PhD</b> <i>Queen's University</i> <b>Avery D. Faigenbaum, EdD</b> <i>The College of New Jersey</i> <b>Robert M. Malina, PhD</b> <i>University of Texas at Austin</i> <b>Andrew M. Watson, MD *</b> <i>University of Wisconsin-Madison</i> <b>Brian Feeley, MD</b> <i>University of California- San Francisco</i> <b>Stephanie A. Kliethermes, PhD</b> <i>University of Wisconsin-Madison</i>	Impact of youth sport specialization on musculoskeletal injury risk and early discontinuation of sport <b>(Writing Group #2)</b> <b>Stephen W. Marshall, PhD §</b> <i>University of North Carolina-Chapel Hill</i> <b>Cynthia R. LaBella, MD §*</b> <i>Northwestern University</i> <b>Mackenzie M. Herzog, MPH §</b> <i>University of North Carolina-Chapel Hill</i> <b>M. Alison Brooks, MD, MPH *</b> <i>University of Wisconsin-Madison</i> <b>Mininder S. Kocher, MD</b> <i>Boston Children's Hospital</i> <b>David R. Bell, PhD, ATC</b> <i>University of Wisconsin-Madison</i> <b>R. Dawn Comstock, PhD</b> <i>University of Colorado-Denver</i>	Organizational guidelines and recommendations for healthy and safe youth sport participation <b>(Writing Group #3)</b> <b>Daniel C. Herman, MD, PhD §*</b> <i>University of Florida</i> <b>Adam S. Tenforde, MD §*</b> <i>Harvard University</i> <b>Joel S. Brenner, MD, MPH *</b> <i>Children's Hospital of the King's Daughters</i> <b>Gregory D. Myer, PhD</b> <i>Cincinnati Children's Hospital</i> <b>John P. DiFiori, MD *</b> <i>Hospital for Special Surgery</i> <b>Vicki R. Nelson, MD*</b> <i>Greenville Health System</i> <b>Alicia M. Montalvo, PhD, ATC</b> <i>Florida International University</i>
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§ co-chair of writing group; \* AMSSM member

Supplementary Table 3 – Search Strategy\*†

Search	Search terms
#1	young OR youth OR pediatric OR immature OR high school OR child OR adolescent
#2	#1 AND (athlete OR sports OR athletes)
#3	#2 AND (specialization OR specialisation OR free play OR single-sport OR year-round OR deliberate practice)
#4	<b>For writing group #1:</b> #3 AND (performance OR talent OR elite OR expert OR expertise OR skill-acquisition OR scholarship OR attrition OR persistence OR longevity) <b>For Writing group #2:</b> #3 AND (“overuse” OR “injury” OR “severity” OR “pain” OR “chronic” OR “gradual onset” OR “quality of life” OR “physical activity” OR “participation” OR “termination”) <b>For Writing Group #3:</b> #3 AND (“guidelines” OR “recommendations” OR “consensus” OR “solution” OR “intervention”)

Note: The first 3 levels of search terms were consistent among all writing groups. The fourth level was specific to the targeted writing group.

\*Search strategy is an extension of that originally developed by Kliethermes et al.<sup>6</sup>

†Complete search strategies can be found in each of the systematic reviews. Whenever possible, the three writing groups aligned in search strategy. Co-chairs of each writing group met monthly to ensure consistency. For all systematic reviews, the target population included individuals under 21 years of age. Relevant literature must have included an explicit measure of sport specialization, although closely related exposures such as training load were additionally captured. Any comparator was accepted, however it was expected most studies would use an internal comparator (e.g. youth with low degrees of specialization). Outcomes were writing group specific and pertain to the level #4 search terms. Inclusion criteria included published peer-reviewed articles with full text English versions available. Identification of studies was based on the search terms provided, but also resulted from committee member referral of relevant studies, prior literature reviews, and expert committee or position statements.