What You Need to Know About Special Olympics Athletes

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Special Olympics International

- 4,200,000 athletes
- 1,700,000 coaches and volunteers
- 170 countries, all 50 states
- 32 official sports
- 70,000 competitions around the world each year

Matthew Holder

- Special Olympics
- AADMD - American Academy of Developmental Medicine and Dentistry
- Lee Specialty Clinic
Special Olympics

- Athlete Leadership Program
- Training people with ID to be leaders in their community
- Unified Sports
- Sports competitions involving athletes with and without ID
- Healthy Athletes
- The largest public health screening program for people with ID in the world

Healthy Athletes

Healthy Athletes
**Opening Eyes**
- Provides visual screenings
- Provides sunglasses to athletes
- Provides corrective eyewear
- 33% fail eye health
  - (Estimate 1/3 serious)
  - 66% not examined in 3 years
  - 26.7% not seeing 20/40
  - 37% need glasses or protective eyewear

**Healthy Hearing**
- Provides hearing screenings
- Provides hearing aids to athletes
- 20.5% threshold losses
- 16.5% showed a conductive/mixed loss
- 3.3% require hearing aids

**FUN Fitness**
- Flexibility, strength, balance, and aerobic condition
- 58% needed improvement in balance
- 15% needed improvement in flexibility
- 20% needed improvement in strength
- 22% needed referral to a physical therapist
Health Promotion

- Provide and reinforce healthy lifestyle information to athletes and families
- Establish best ways to shape lifestyle choices
- 70% are overweight or obese
- 22% have HTN
- 20% have low bone density
- 5% use tobacco products

Special Smiles

- Provides dental screenings
- Provides mouth guards for athletes in contact or high-risk sports
- 12% in active dental pain
- 35% had untreated dental decay
- 50% had gingival signs

Decay
**Fit Feet**

- Provides screenings of the feet and ankles
- Assesses the correctness of footwear
- 51% of females and 59% of males are wearing the wrong size shoes!!
- 25% had ingrown toenails
- 11% had athlete’s foot

**MedFest**

- Provides a free sports physical and to any potential Special Olympics athlete
- 25% are taking medications which can negatively impact the athletic experience
- 22% had at least one previously undiagnosed medical condition

**Neurodevelopmental Disorder**

Any process which adversely affects the normal development of the nervous system
Neurodevelopmental Disorder

Genetic Causes
- Metabolic (PKU)
- Chromosomal (Trisomy 21)
- Structural (Tuberous Sclerosis)

Acquired Causes
- Prenatal (Fetal Alcohol Syndrome)
- Perinatal (Hypoxic Brain Injury)
- Postnatal (Lead Toxicity)
**Intellectual Disability (Definition)**

- Generally, an IQ test score of around 70 or as high as 75 indicates a limitation in intellectual functioning.
- Standardized tests can also determine limitations in adaptive behavior, which comprises three skill types:
  - **Conceptual skills**—language and literacy; money, time, and number concepts; and self-direction.
  - **Social skills**—interpersonal skills, social responsibility, self-esteem, guiltlessness, naivety (i.e., wariness), social problem solving, and the ability to follow rules/obey laws and to avoid being victimized.
  - **Practical skills**—activities of daily living (personal care), occupational skills, healthcare, travel/transportation, schedules/routines, safety, use of money, use of the telephone.

**People with Intellectual Disability**

- Neuromotor dysfunction: 20-30%
- Seizure disorders: 15-30%
- Sensory impairment: 25-32%
- Behavioral disorders: 15-35%
Seizure

- 15-30% of Athletes
- Significant risk in sports such as:
  - Sailing
  - Swimming
  - Diving
  - Cycling
  - Equestrian
- Goal is to be seizure free for 1 year in certain sports

Seizure threshold maybe be lower in the presence of:
- Increased adrenal activity
- Decrease in sleep
- Increased core temperature
- Electrolyte imbalances
- Decrease in antiepileptic medications
  - Forgot pills
  - Anti-doping

![Diagram showing various disorders]

- Intellectual Disability
- Sensory Impairment
- Neurosensor Dysfunction
- Seizure Disorder
- Abnormal Behavior
- Genetic
- Acquired
- Neurodevelopmental Disorder
- Cardiogenic Conditions
Neurodevelopmental Disorder

Secondary Health Consequences

Aspiration pneumonia

Secondary Health Consequences

Rampant dental decay secondary to the patient’s inability to perform self-care
Cardiac Risk

**Down Syndrome** – 40–50% cardiac defect rate
**Fetal Alcohol Syndrome** – 29–41% cardiac defect rate
**Fragile X** – up to 50% cardiac defect rate
**Turner Syndrome** – up to 50% cardiac defect rate
**William Syndrome** – up to 75% cardiac defect rate

Syndromes Associated with Cardiac Defects

- **Goldenhar Syndrome**
- **Ehlers-Danlos Syndrome**
- **Kearns-Sayre Syndrome**
- **Laurence-Moon-Biedle Syndrome**
- **Tuberous Sclerosis**
- **Turner Syndrome**
- **VACTERL Syndrome**
- **VACTER Syndrome**
- **Velo-Cardio-Facial Syndrome**
- **Von Hippel Lindau Syndrome**
- **William-Beuren Syndrome**
- **Williams Syndrome**
- **Wolff-Parkinson-White Syndrome**
- **Zellweger Syndrome**

Instability of the Atlantoaxial (C1-C2) Joint

- Approximately 75% of people with Down syndrome
- Symptomatic
- 13–14% Asymptomatic
- AAI only accounts for 2/3 of neck abnormalities in people with DS
- Asymptomatic AAI is not correlated with SCI
- Symptomatic AAI is correlated with SCI
**Atlantoaxial Instability (AAI)**

- In 1984, the AAP favored the use of the x-ray
- In 1995, the AAP was equivocal about x-ray
- In 2011, the AAP does not favor the use of the x-ray.
- In 2013 SOI has proposed changes to the AAI rule awaiting board approval
  - Focus on the entire spinal column
  - Focus on neurological symptoms.

**Spinal Cord Compression/AAI**

- Symptoms of AAI or spinal cord compression?
  - Numbness or tingling in hands, feet arms or legs
  - Weakness in hands, feet arms or legs
  - Gait changes
  - Coordination changes
  - Spasticity
  - Paralysis
  - Difficulty controlling bowels or bladder
  - Head Tilt
  - Burner, stinger or pinched nerve in neck arms shoulders or hands

![Diagram of Neurodevelopmental Disorder](image_url)
Neurodevelopmental Disorder
Secondary Health Consequences
- Cephalic
- Cardiac
- GenitoUrinary
- CardioPulmonary
- MusculoSkeletal
- Endocrine-Metabolic

Intellectual Disability
Sensory Impairment
Neuromotor Dysfunction
Seizure Disorder
Abnormal Behavior

Fragile X Syndrome
Down Syndrome
Autism
Fetal Alcohol

Medication Facts:
- People with ID are 25% more likely to get a prescription when they go to the doctor.
- People with ID are 300% more likely to have a prescription repeated on their next visit.
- 25% of SO athletes (in the US) are taking a medication that could negatively affect sports participation.
Medication Risk

- Long QT Syndrome (cardiac arrhythmia)
- 5% of SO athletes take an at-risk medication
- Weight Gain
- 5% increase in body mass compared to athletes not taking these medications
- Osteoporosis (low bone density)
- 5% / 15% of SO athletes have osteoporosis / osteopenia
- 21% of SO athletes have broken a bone

Medication Risk

- Constipation
  - Laxatives are one of the most common prescribed medications to people with ID (up to 48%)
- Sun Sensitivity
  - Around 20% of SO athletes take medications that can cause sun sensitivity
- GERD
  - Very common problem in patients with ID (up to 36%)
  - May appear as behavioral problems or “enamel erosion”

Enamel Erosion

- Image of eroded teeth

Life Expectancy Increase

Pearls from the Field

- Treat children as children and adults as adults
- Informed consent is not always clear - clarify
- Communicate DIRECTLY with the patient
- Focus on ABILITY not disability
- Language matters

End the “R-Word”

- Intellectual Disability instead of Mental Retardation
- Federal Government
- AMA
- ADA
- DSM-V
- Person first language
- “Athlete with Intellectual Disability”
Get a thorough, direct and indirect history
- Review medications for side effects
- Be cognizant of your non-verbal communication
- Perform a thorough physical, it may be the only time this athlete gets one.
  - This includes feet and teeth.
- New behaviors are often not psychiatric
- New neurological issues are a cause for concern

Sports Restriction (1-2%)

- Most likely reasons for sports restriction
  - Significant cardiac defect or arrhythmia
  - Evidence of spinal cord compression
  - Acute infection
  - Enlarged Liver or Spleen
  - Stage II (160/100) Hypertension or higher
  - Poor blood oxygenation on room air
  - Seizures

Learning More

- www.specialolympics.org
- Volunteer for MedFest or Health Promotion
- US National Games 2014 (New Jersey)
- World Games 2015 (Los Angeles)
- www.aadmd.org
- Network of physicians and dentists who are experts in caring for people with ID
- Online continuing medical education
- mattholder@aadmd.org (my email address)