



Special Olympics  
**Healthy Athletes<sup>®</sup>**

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Healthy Athletes Prevalence Report: 2015 Update  
December 2016



Special Olympics  
**Health**

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# Table of Contents

<b>Introduction.....</b>	<b>3</b>
Special Olympics and Healthy Athletes Overview .....	3
Data Description .....	3
Data Limitations.....	4
Addressing Data Limitations.....	4
<b>Data Results by Discipline.....</b>	<b>6</b>
Fit Feet.....	6
<i>Introduction.....</i>	6
<i>Gait Abnormalities.....</i>	7
<i>Bone Deformities.....</i>	8
<i>Skin/Nail Condition.....</i>	9
Health Promotion .....	10
<i>Introduction.....</i>	10
<i>Bone Density.....</i>	11
<i>Obesity and Overweight (Youth: Ages 8-19) .....</i>	12
<i>Obesity and Overweight (Adults: Ages 20+).....</i>	13
<i>Exposure to Second Hand Smoke: Self-Reported by Special Olympics athletes .....</i>	14
FUNfitness .....	15
<i>Introduction.....</i>	15
<i>Flexibility Problems .....</i>	16
<i>Strength Problems.....</i>	17
<i>Balance Problems .....</i>	18
Opening Eyes.....	19
<i>Introduction.....</i>	19
<i>Never Had an Eye Exam: Self-Reported by Special Olympics athletes.....</i>	20
<i>Eye Disease .....</i>	21
<i>Needed New Prescription .....</i>	22
Special Smiles .....	23
<i>Introduction.....</i>	23
<i>Untreated Tooth Decay.....</i>	24
<i>Gingival Signs .....</i>	25

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<i>Urgent Dental Referral</i> .....	26
Healthy Hearing .....	27
<i>Introduction</i> .....	27
<i>Blocked or Partially Blocked Ear Canal</i> .....	28
<i>Failed PureTone Hearing Test</i> .....	29
<i>Permanent Hearing Loss</i> .....	30
<b>Implications</b> .....	<b>31</b>
<b>Conclusion</b> .....	<b>31</b>
<b>Appendices</b> .....	<b>33</b>
Appendix I: U.S. General Population Comparison of Health Indicators.....	33
Appendix II: HAS Data Sharing Frequently Asked Questions.....	34
Appendix III: Special Olympics Data Access and Compliance Form .....	38
Appendix IV: Special Olympics Project Proposal Form .....	39
Appendix V: Health Indicators by Discipline by Year .....	40
<i>Fit Feet</i> .....	40
<i>Health Promotion</i> .....	41
<i>FUNfitness</i> .....	42
<i>Opening Eyes</i> .....	42
<i>Special Smiles</i> .....	44
<i>Healthy Hearing</i> .....	45
Appendix VI: Global/Regional Table.....	47

# Introduction

## Special Olympics and Healthy Athletes Overview

The mission of Special Olympics (SO) is to provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities (ID), giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community.

Special Olympics created its Healthy Athletes (HA) program in 1997 to address the health disparities faced by people with ID. The program provides SO athletes with free health exams, education, and referrals for follow-up care in a fun, welcoming environment that removes the barriers people with ID often face with a visit to a doctor or dentist. In addition to the individual benefits HA provides, each event trains healthcare professional volunteers, helping them learn how to treat people with ID in their own practices. Currently, the HA program includes seven disciplines of health exams: *Fit Feet* (a podiatric exam), *FUNfitness* (a physical therapy exam), *Health Promotion* (an exam focused on health education with clinical exams in bone density, blood pressure, and BMI), *Healthy Hearing* (a hearing exam), *MedFest* (a sports physical), *Special Olympics-Lions Clubs International Opening Eyes* (a vision and eye health assessment), and *Special Smiles* (an oral health exam). Each discipline has a specific scientifically validated protocol that must be followed. Forms used to collect data for each discipline are included in Appendix IV, and manuals for each discipline can be found in the health section of Special Olympics' resources page at <http://resources.specialolympics.org/ResourcesDefault.aspx>.

Since its beginning, HA has conducted 1.7 million health exams, and data from these exams are aggregated into the world's largest database on the health of people with ID. Special Olympics Programs<sup>1</sup> have used HA data in multiple ways. For instance, it has been helpful to show to potential partners for fundraising, to show existing donors and partners that they are making a difference, to attract new donors and partners, and for evidence-based discussions with other stakeholders, such as policymakers. External researchers have used HA data for publications in research journals to expand the knowledge related to health status of people with ID. It is our hope that this report supports all efforts to utilize HA data to improve the lives of SO athletes and other people with ID and to raise awareness of the health status of this population.

## Data Description

Currently, there are results from over 700,000 exams in the Healthy Athletes System (HAS), with varying amounts per discipline. This report outlines data from selected health indicators from six of the disciplines (*Health Promotion*, *FUNFitness*, *Fit Feet*, *Opening Eyes*, *Special Smiles*, and *Healthy Hearing*) and displays the results by gender, age group, and region of the world. Reported data only include exam results from SO athletes and not Unified partners (individuals without ID who participate in Unified Sports with SO athletes) or Young Athletes (SO participants under age 8). Reporting includes all responses (excluding non-responses) for each indicator unless noted.

Tables 1, 2, and 3 below display the number of exams in HAS from 2014 and 2015 data for each discipline by region, age group, and gender. Differences among groups of gender, age, and region are not tested for

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<sup>1</sup> Special Olympics Programs (SO Programs) are independent 501(c)3 organizations that are accredited to carry the Special Olympics name. Generally these Programs operate at the state level in the US (e.g., SO Florida) and at the national level outside the US (e.g. SO Malawi).

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statistical significance. Differences of less than or equal to 1% were considered “about the same”, differences of greater than 1% and less than or equal to 5% were considered “slightly higher” or “slightly lower”, and differences of greater than 5% were considered “higher” or “lower” than the comparison group. This report also provides a comparison of HA results to health data from the general population and gives examples of how data collected through HA has been used in longitudinal and cross-disciplinary analyses.

## Data Limitations

Data for health indicators was excluded in this report for descriptors (age group, gender, region) if the sample size did not exceed 100. Data is limited to exams where date of birth of an athlete is known and the athlete is at least eight years old. HA exams were developed for athletes in traditional SO programming, which begins at the age of eight. Separate protocols are currently being developed for Young Athletes (participants under the age of eight). Therefore, observations were included for athletes older than seven at the time of the exam and included a date of birth after January 1, 1920, which is a date commonly entered for an athlete when the actual date of birth is unknown.

Special Olympics does not collect diagnostic data on the type of intellectual disability. As such, this report does not present this kind of data. HA data also does not include demographic information beyond gender, age, and country. Missing data is another limitation of this dataset, which is in part due to data integrity issues, since exam forms have changed over time for each discipline. Other times, information is simply not entered into HAS. This can be for a variety of reasons, including data entry issues or athletes not completing an exam. Almost all HA exams are performed by volunteers who may not be familiar with the way the data from the exams are being used, which can lead to inconsistent data entry, especially in text fields. Lastly, there are not unique identifiers for the entire dataset. Without a unique identifier, data can sometimes be linked across time or disciplines with other information, such as the combination of first name, last name, date of birth, and gender. However, athlete information is not always entered into the system consistently or accurately which often makes these linkages challenging.

## Addressing Data Limitations

Special Olympics is addressing these data limitations in a variety of ways, including working with a new data vendor and technology partners to create a unique identifier for athletes. Eventually, this unique identifier will assist with linking athletes between disciplines and linking to other data, such as medical background information and sports performance data. There is also an effort to change data collection methods from paper to electronic tablets. This change will assist in improving data quality by limiting data inputs to biologically plausible values and eliminating the step of transferring information on paper forms into HAS. It will also improve the problem of missing data by prompting or requiring volunteers to enter data into important or required fields.

**Table 1: 2014-2015 Healthy Athletes discipline data by region.**

Region	Health Promotion	FUNfitness	Fit Feet	Opening Eyes	Special Smiles	Healthy Hearing
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
<b>Total</b>	30,429 (100.0)	20,148 (100.0)	19,524 (100.0)	33,665 (100.0)	45,524 (100.0)	22,073 (100.0)
<b>Africa</b>	4,002 (13.5)	703 (3.6)	791 (4.1)	3,032 (9.3)	4,648 (10.7)	1,002 (4.7)
<b>Asia Pacific</b>	2,473 (8.4)	2,846 (14.4)	1,728 (9.0)	2,269 (6.9)	4,601 (10.5)	2,110 (9.9)
<b>East Asia</b>	2,092 (7.1)	1,425 (7.2)	1,381 (7.2)	2,327 (7.1)	2,834 (6.5)	1,130 (5.3)
<b>Europe/Eurasia</b>	6,257 (21.2)	4,475 (22.7)	4,329 (22.5)	5,492 (16.8)	6,401 (14.7)	5,402 (25.2)
<b>Latin America</b>	2,586 (8.7)	1,146 (5.8)	1,057 (5.5)	2,295 (7.0)	1,837 (4.2)	233 (1.1)
<b>Middle East</b>	-	-	-	-	-	-
<b>North Africa*</b>	-	-	-	-	-	-
<b>North America</b>	12,174 (41.2)	9,160 (46.4)	9,941 (51.7)	17,268 (52.8)	23,313 (53.4)	11,551 (53.9)

\*Data for events in the MENA region were not in HAS at the time of analysis.

**Table 2: 2014-2015 Healthy Athletes discipline data by age group.**

Age Group	Health Promotion	FUNfitness	Fit Feet	Opening Eyes	Special Smiles	Healthy Hearing
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
<b>Total</b>	30,429 (100.0)	20,148 (100.0)	19,524 (100.0)	33,665 (100.0)	45,524 (100.0)	22,073 (100.0)
<b>8 – 19</b>	13,306 (45.0)	7,647 (38.7)	8,114 (42.2)	14,881 (45.5)	19,511 (44.7)	8,210 (38.3)
<b>20 – 29</b>	8,207 (27.7)	6,379 (32.3)	5,581 (29.0)	9,062 (27.7)	11,675 (26.8)	6,265 (29.2)
<b>30 – 39</b>	4,215 (14.3)	3,069 (15.5)	2,792 (14.5)	4,642 (14.2)	6,459 (14.8)	3,552 (16.6)
<b>40 – 49</b>	2,198 (7.4)	1,632 (8.3)	1,579 (8.2)	2,511 (7.7)	3,527 (8.1)	2,018 (9.4)
<b>50 – 59</b>	1,154 (3.9)	807 (4.1)	819 (4.3)	1,207 (3.7)	1,883 (4.3)	1,069 (5.0)
<b>60+</b>	504 (1.7)	225 (1.1)	342 (1.8)	387 (1.2)	579 (1.3)	321 (1.5)

**Table 3: 2014-2015 Healthy Athletes discipline data by gender.**

Gender	Health Promotion	FUNfitness	Fit Feet	Opening Eyes	Special Smiles	Healthy Hearing
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
<b>Total</b>	30,429 (100.0)	20,148 (100.0)	19,524 (100.0)	33,665 (100.0)	45,524 (100.0)	22,073 (100.0)
<b>Female</b>	10,976 (37.2)	6,943 (35.2)	7,282 (38.1)	12,159 (37.3)	16,315 (37.5)	8,129 (38.0)
<b>Male</b>	18,512 (62.8)	12,759 (64.8)	11,856 (62.0)	20,460 (62.7)	27,177 (62.5)	13,251 (62.0)

# Data Results by Discipline

## Special Olympics **Fit Feet**

### **Fit Feet**



### **Introduction**

Many Special Olympics athletes suffer from foot and ankle pain or deformities that impair their performance. Additionally, athletes are not always fitted with the best shoes and socks for their particular sport. In 2003, Healthy Athletes, in cooperation with the American Academy of Podiatric Sports Medicine and the Federation of International Podiatrists, developed the Fit Feet discipline to evaluate foot and ankle deformities. Athletes receive foot and ankle exams, are checked for proper shoes and socks, and receive education in proper footwear and care of the feet and toes.

### **Goals**

1. Increase access to foot care for Special Olympics athletes, as well as all people with intellectual disabilities.
2. Raise foot care specialists' awareness of foot concerns of people with special needs, including difficulties involved in accessing treatment.
3. Provide a list of regional foot care specialists who care for people with special needs to all athletes who participate in the Special Olympics Fit Feet program.
4. Develop a body of knowledge about proper foot care of children and adults with special needs.
5. Insure appropriate footwear with regards to the sport in which an athlete is participating as well as fit and comfort.
6. Train health care professions, students, and others about the needs and care management of people with intellectual disabilities.

### **Global Importance and Impact, 2015**

The measures from the examination can be found on the Fit Feet form in Appendix IV. In 2015, 17,179 Fit Feet exams were conducted with athletes from 50 countries at 98 events. 8,492 Fit Feet exams were entered into HAS. The results of these exams show that:

- 46% have gait abnormalities
- 18% have bone deformities
- 49% have skin and nail conditions

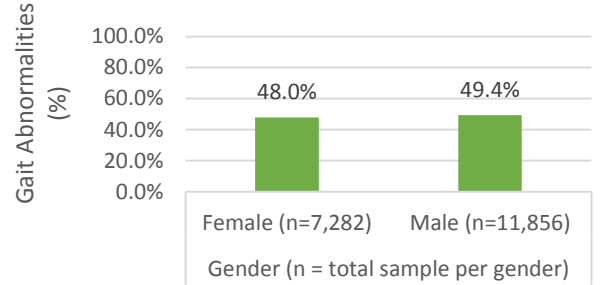
The data analysis on the following pages is based on the 19,227 Fit Feet exams in HAS from 2014 – 2015. Gender, age group, and regional data presented below are based on 2014 – 2015 combined data. Percentages are based on the number of athletes who completed the Fit Feet exam.



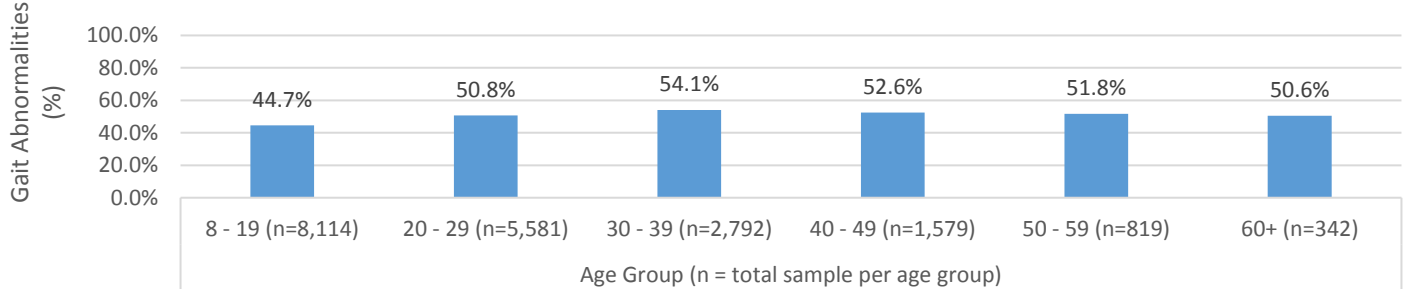
## Gait Abnormalities

Combined 2014 and 2015 data show males had a slightly higher rate of gait abnormalities compared to females. Prevalence of gait abnormalities was highest in the 30 – 39 age group. The prevalence of gait abnormalities varied the most by region. East Asia had the highest rates of gait abnormalities and Latin America had the lowest.

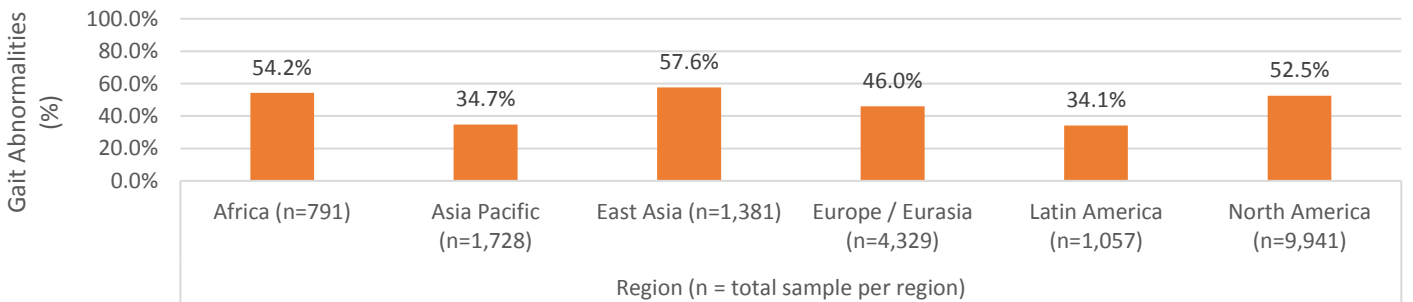
### Gait Abnormalities by Gender



### Gait Abnormalities by Age Group

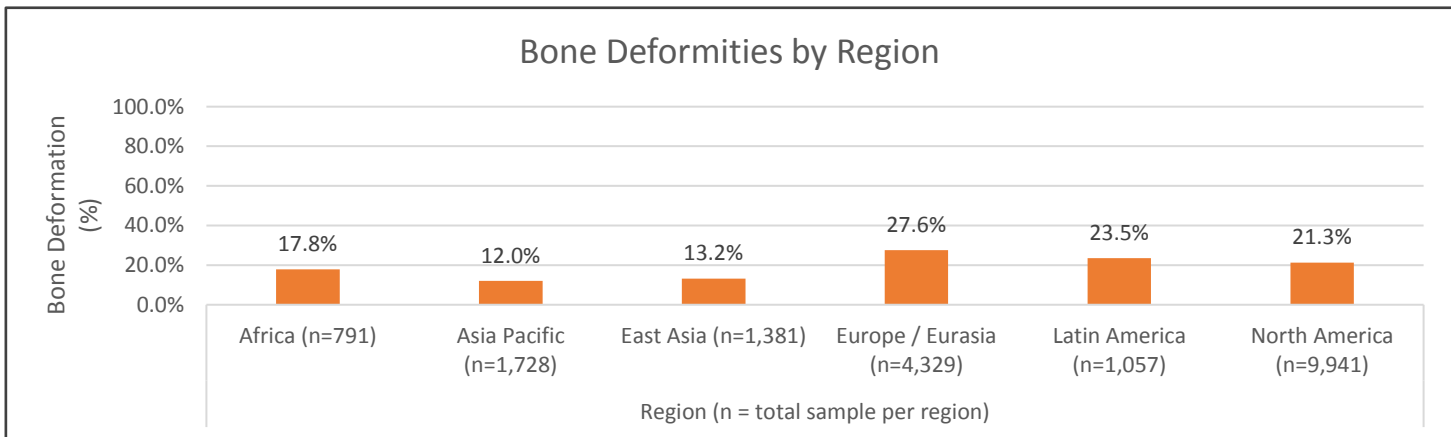
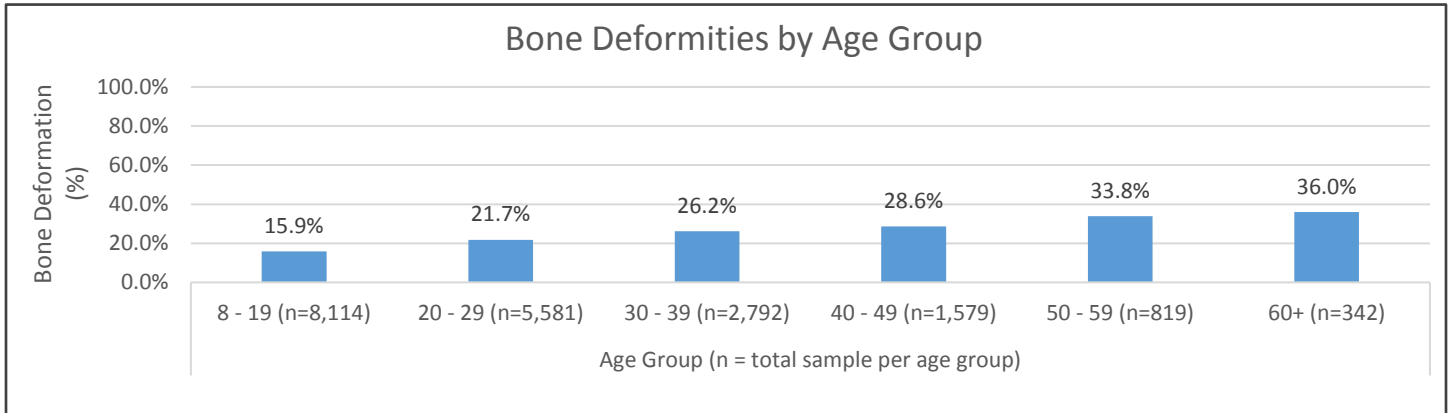
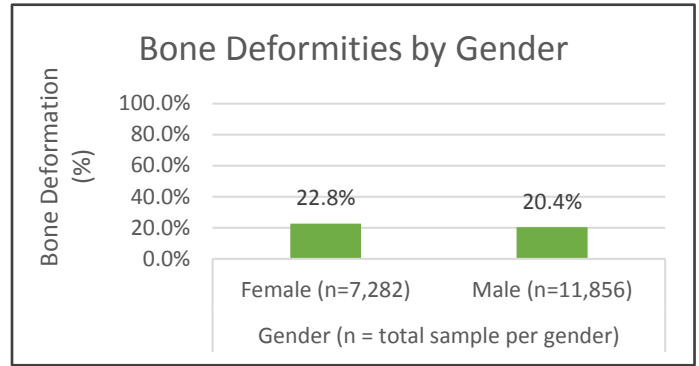


### Gait Abnormalities by Region



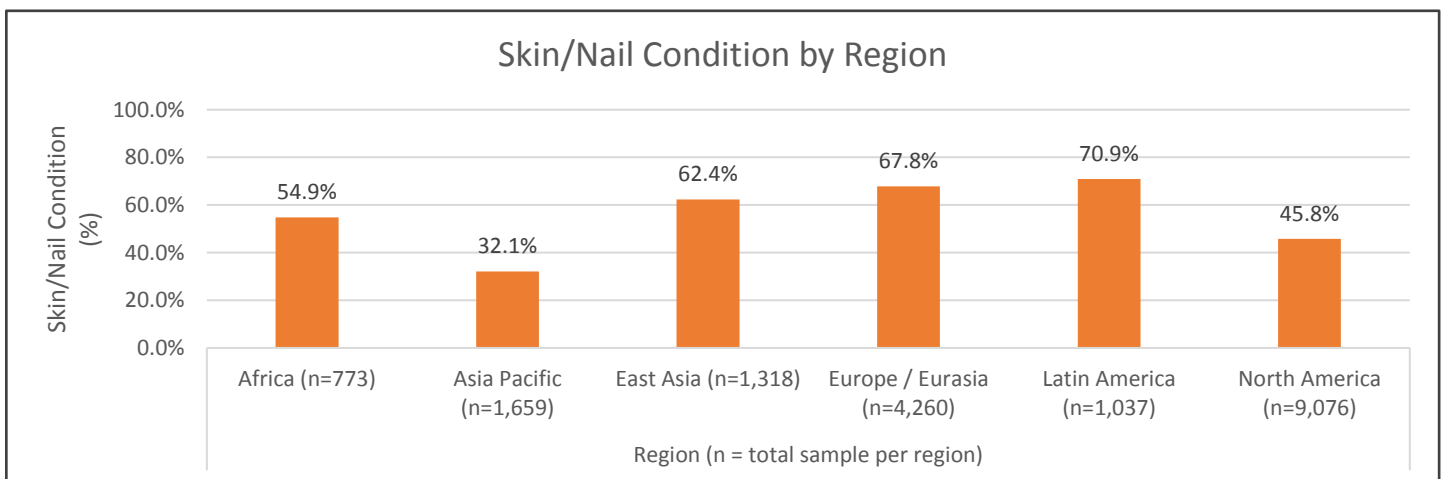
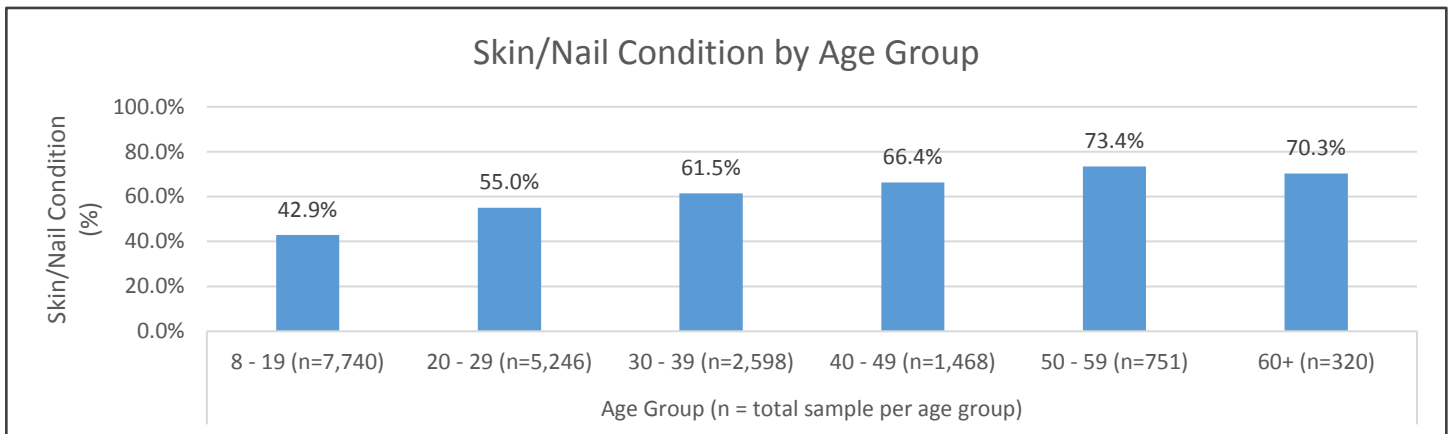
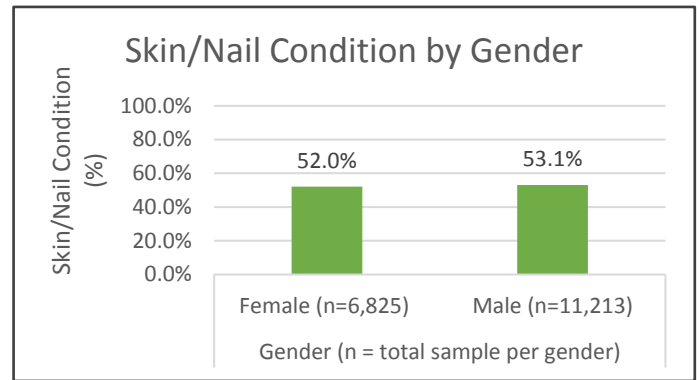
## Bone Deformities

Combined 2014 and 2015 data show females had a slightly higher rate of bone deformities than males. Prevalence of bone deformities was highest in the 60+ age group. Rates of bone deformities were highest in Europe / Eurasia and lowest in Asia Pacific.



## Skin/Nail Condition

Combined 2014 and 2015 data show males had slightly higher rates of skin/nail conditions than females. Prevalence of skin/nail conditions was highest in the 50-59 age group. Latin America had the highest rates of skin/nail conditions and Asia Pacific had the lowest.



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# Special Olympics

# Health Promotion

## Health Promotion

### Introduction



In 2001, Special Olympics launched Health Promotion to improve the general health and fitness of its athletes. Health Promotion focuses on health behavior and health education. The rationale for Special Olympics to promote overall health is the awareness that people with

intellectual disabilities frequently have medical conditions such as heart disease, obesity and diabetes, and that they tend to develop these conditions at earlier stages of life. Doctors and other health care professionals often are not trained to identify and treat these conditions. At Health Promotion, health care professionals including physicians, nurses, nutritionists and health educators provide clinical exams in bone density, blood pressure, and BMI and provide education in areas, such as nutrition, sun safety, and tobacco cessation, targeting the athletes' needs.

Findings show that physical activity and diet can improve sports performance and reduce health risks. Health Promotion is designed to convey and reinforce key concepts on healthy living, healthy lifestyle choices, and locally-specific health issues.

### Goals

1. Encourage and enhance healthy behaviors, and reduce risky behaviors, related to chronic disease prevention, as well as locally-specific health issues; improve self-efficacy and self-advocacy of people with intellectual disabilities around health and wellness.
2. Provide training and educational opportunities through screening events for allied health providers to learn how to provide quality care and wellness programming to individual with intellectual disabilities.
3. Develop a body of knowledge about the overall health and wellness of children and adults with intellectual disabilities.

### Global Importance and Impact

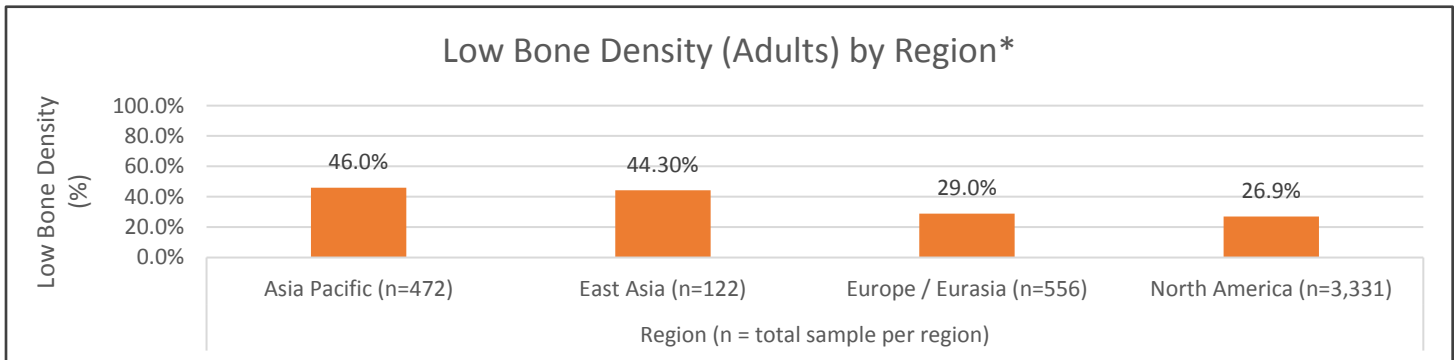
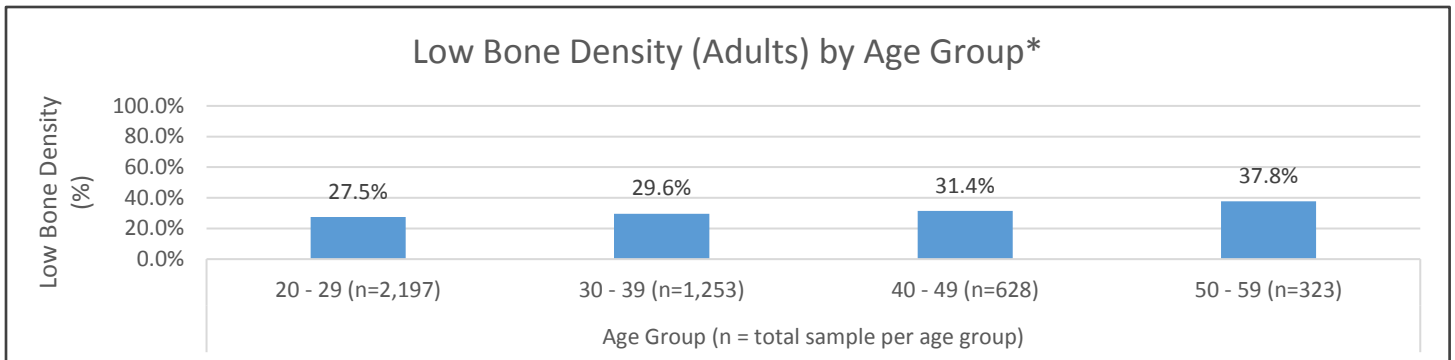
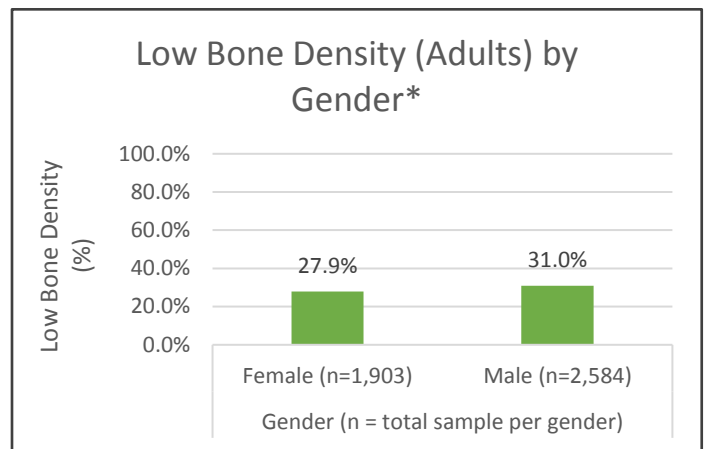
The measures from the examination can be found on the Health Promotion form in Appendix IV. In 2015, 22,430 Health Promotion exams were conducted with athletes from 71 countries at 169 events. 14,333 Health Promotion exams were entered into HAS. The results show that:

- 29% have low bone density
- 29% of children and adolescents and 59% of adult athletes are overweight or obese
- 41% report exposure to second hand smoke

The data analysis on the following pages is based on the 30,429 Health Promotion exams in HAS from 2014 - 2015.

## Bone Density

Combined 2014 and 2015 data show females had slightly lower rates of low bone density than males. Prevalence of low bone density was highest in the 50-59 age group. Bone density exams are not performed on athletes younger than age 20 and the sample of those 60+ years of age was too small to include. Asia Pacific had the highest rates of low bone density and North America had the lowest. The samples for Africa, Middle East/North Africa, and Latin America were also too small to include.

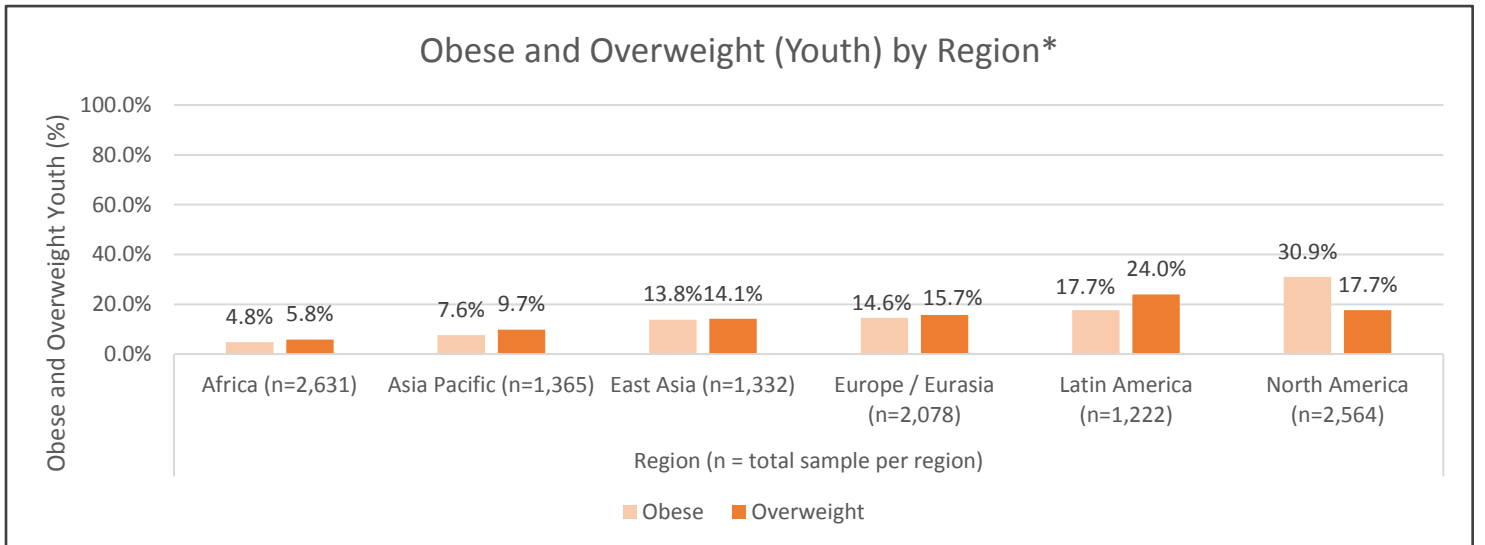
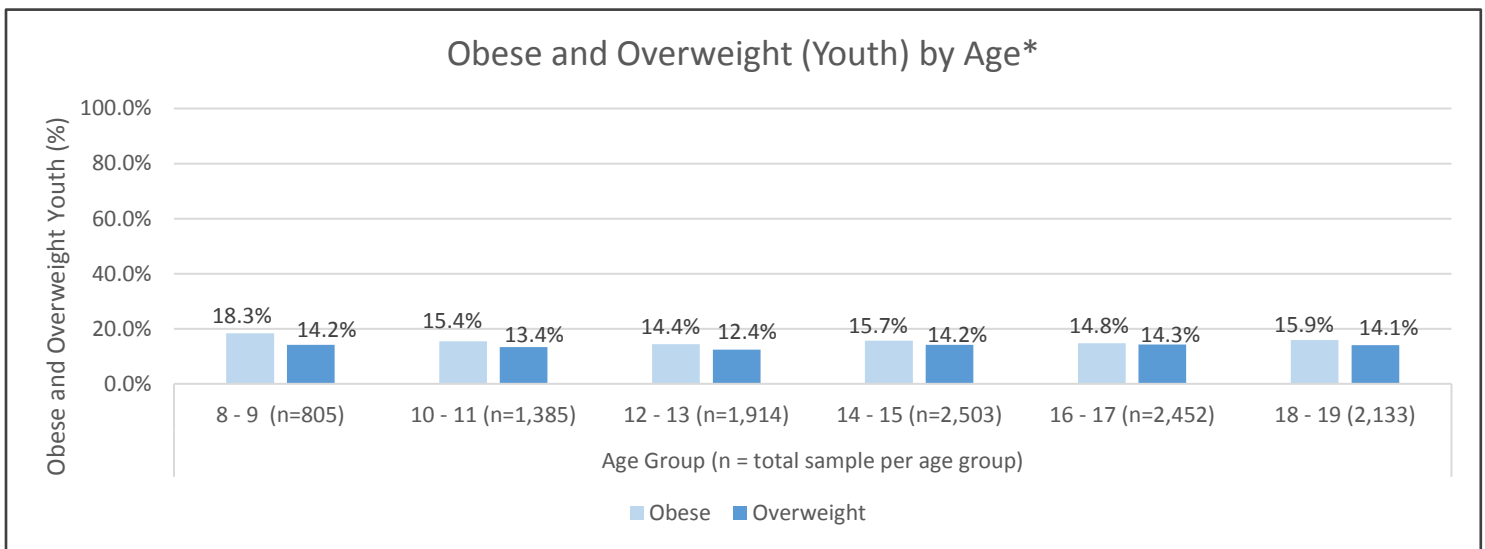
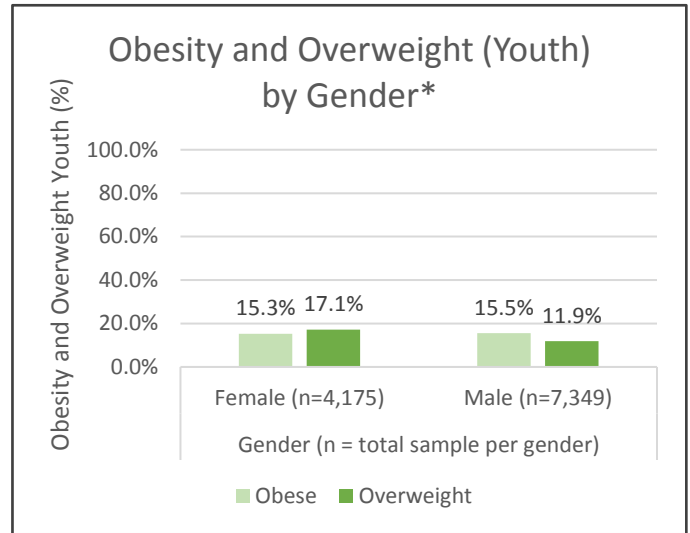


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who completed the bone density section of the Health Promotion exam.

## Obesity and Overweight (Youth: Ages 8-19)

Combined 2014 and 2015 data show females have about the same rates of obesity as males and females have higher rates of overweight compared to male. North America has the highest rates of youth obesity and Latin America has the highest rates of youth overweight. Africa has the lowest rates of youth obesity and overweight.

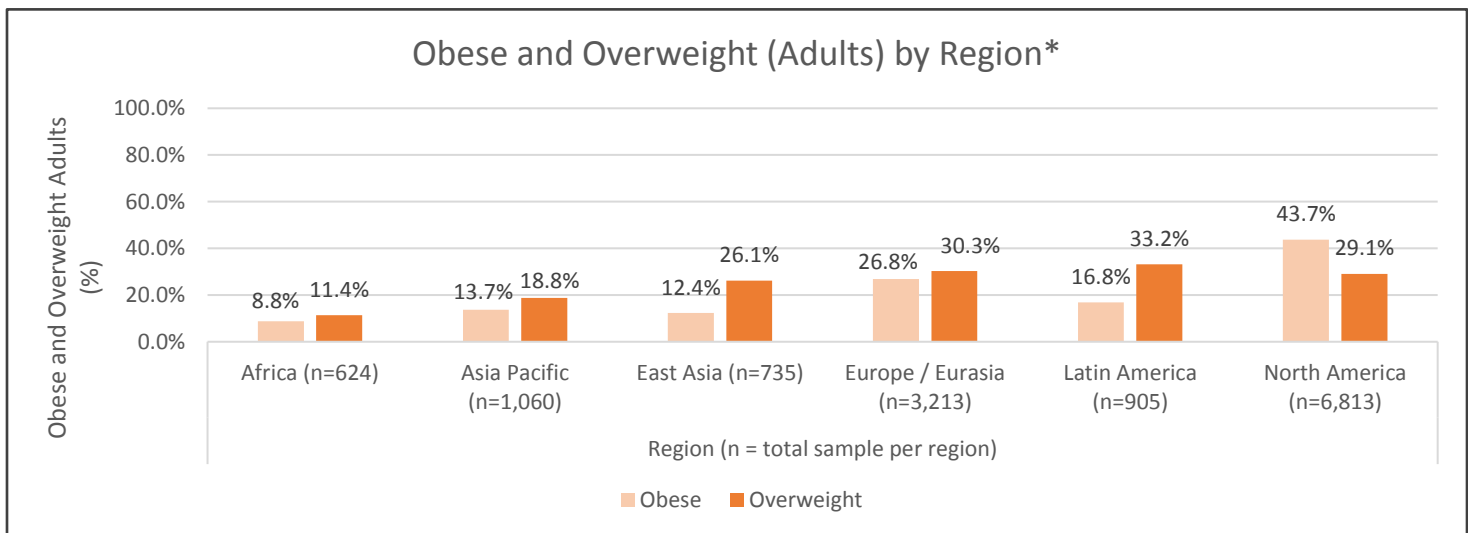
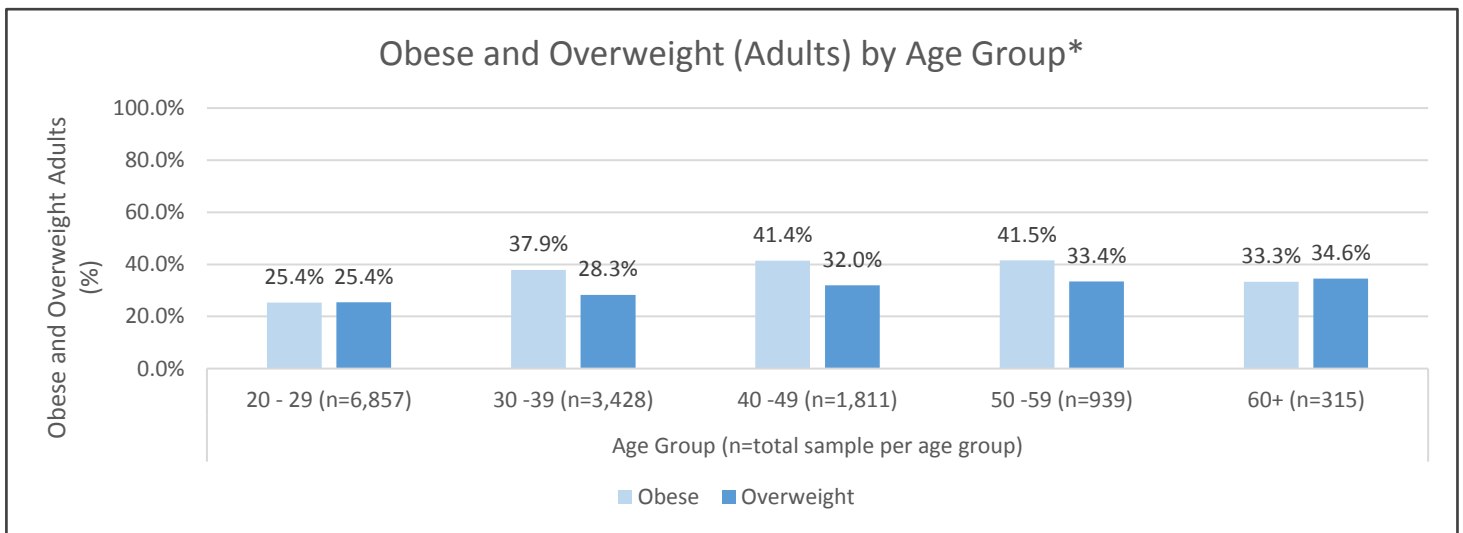
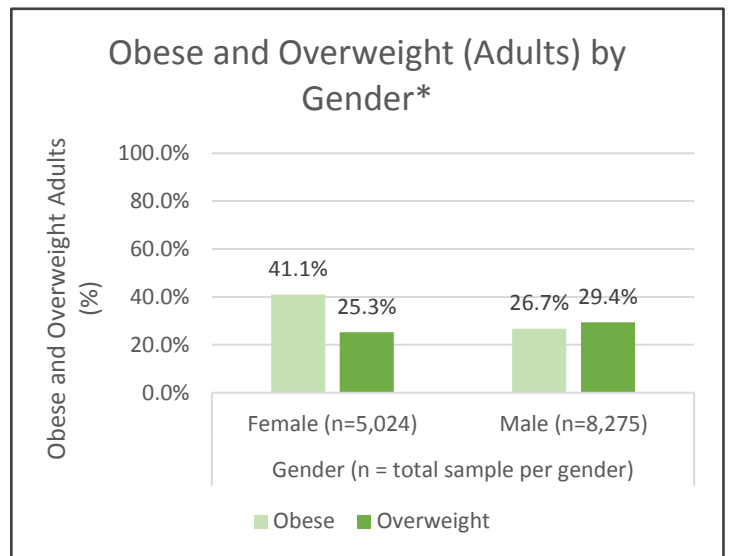


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who completed the height and weight sections of the Health Promotion exam.

## Obesity and Overweight (Adults: Ages 20+)

Combined 2014 and 2015 data show females have much higher obesity rates than males. Combined prevalence of overweight or obesity was highest in the 50 – 59 age group. North America had the highest combined rate of overweight or obesity.

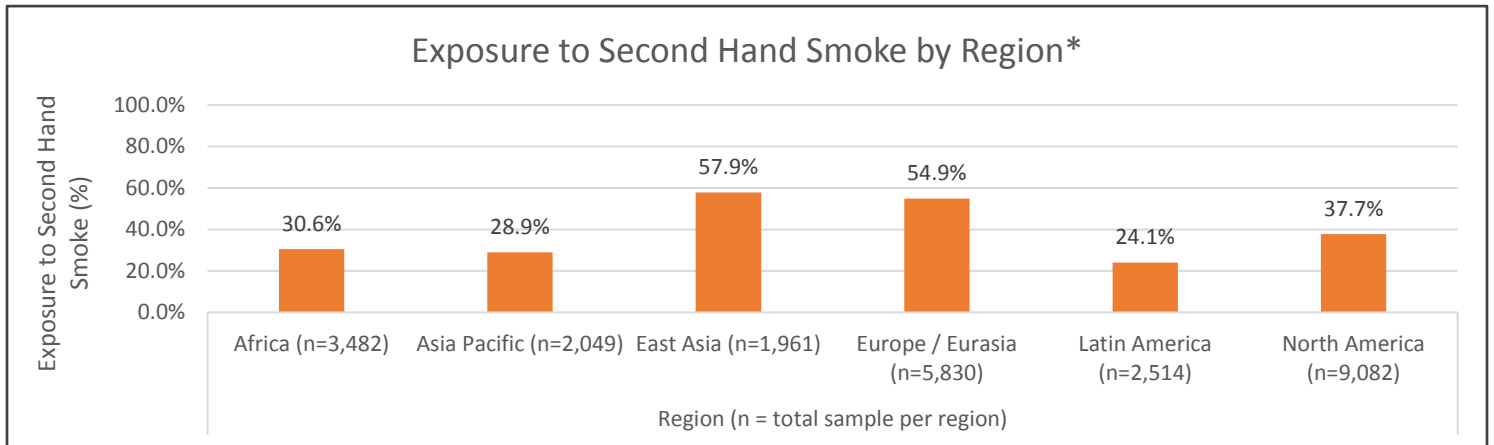
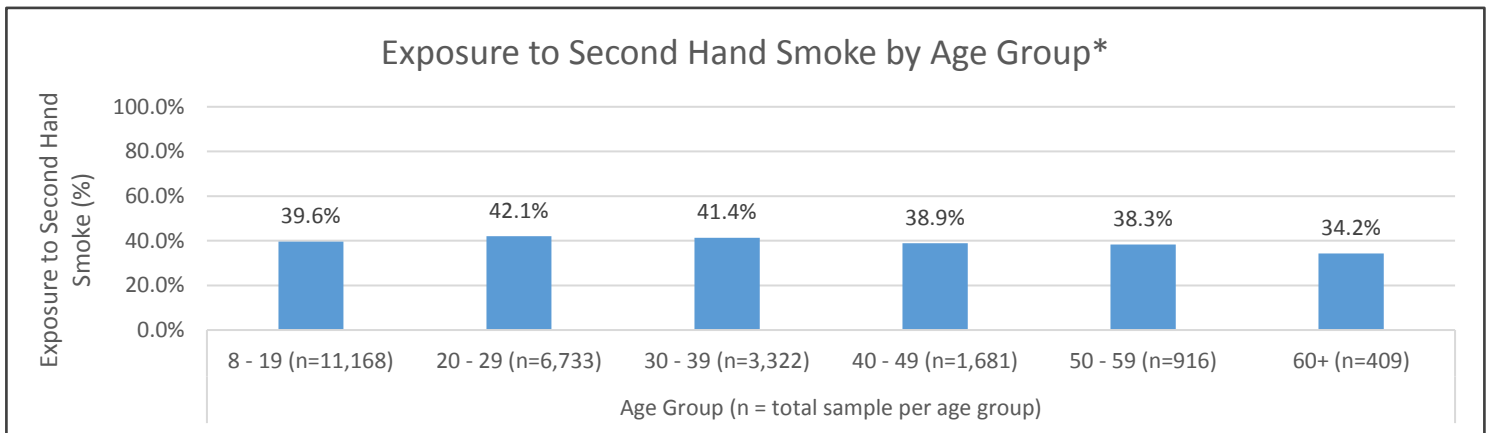
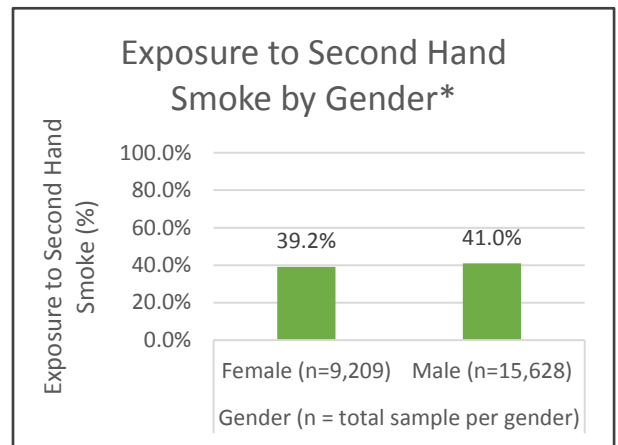


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who completed the height and weight sections of the Health Promotion exam.

## Exposure to Second Hand Smoke: Self-Reported by Special Olympics athletes

Combined 2014 and 2015 data show females had a lower rate of exposure to second hand smoke compared to males. Prevalence of second hand smoke exposure was highest in the 20 – 29 age group. Second hand smoke exposure rates were highest in East Asia and lowest in Latin America.



\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who responded to the question of second hand smoke.





FUNfitness provides fitness exams and education services. FUNfitness, developed in collaboration with the American Physical Therapy Association, has been a part of Special Olympics events since 1999. Physical therapists, assisted by physical therapist assistants and students, provide an assessment of athlete flexibility, functional strength, balance and aerobic condition. Flexibility of hamstring, calf, shoulder rotator and hip flexor muscles; strength of the abdominal, lower and upper extremity muscles; static and dynamic balance; and aerobic fitness are assessed and used as the basis for one-on-one education and on-site consultation to athletes and coaches on how to improve performance. Physical therapists also discuss the components of a good fitness program for risk prevention, and make recommendations for optimal function in sports training and competition so that the athletes train and compete safely.

## Goals

1. Improve athletes' ability to train and compete in Special Olympics and improve the overall fitness of people with intellectual disabilities.
2. Train health care professionals, students and others about the needs and care management of people with intellectual disabilities.
3. Collect, analyze and disseminate data on the health and fitness status and needs of people with intellectual disabilities.
4. Advocate for improved health and wellness policies and programs for people with intellectual disabilities.

## Global Importance and Impact

The measures from the examination can be found on the FUNfitness form in Appendix IV. In 2015, over 14,075 FUNfitness exams were conducted with athletes from 59 countries at 115 events. 10,154 FUNfitness exams were entered into HAS. The results show that:

- 91% have flexibility problems<sup>2</sup>
- 86% have strength problems<sup>3</sup>
- 90% have balance problems<sup>4</sup>

The data analysis on the following pages is based on the 20,148 exams in HAS from 2014 – 2015. Gender, age group, and regional data presented below are based on 2014 – 2015 combined data. Percentages are based on the number of athletes who completed the FUNfitness exam.

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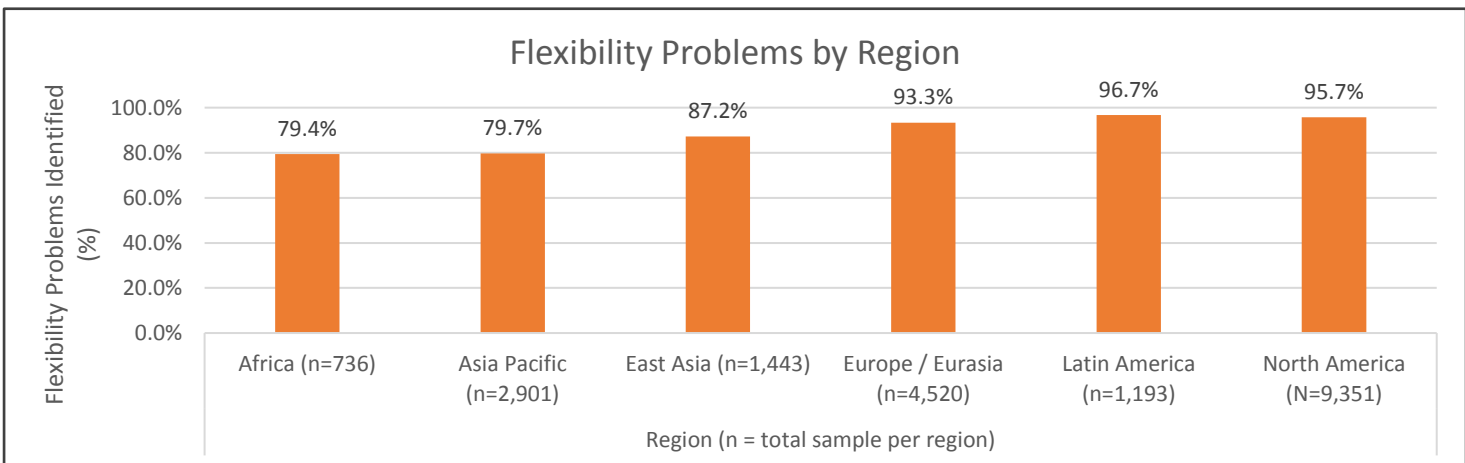
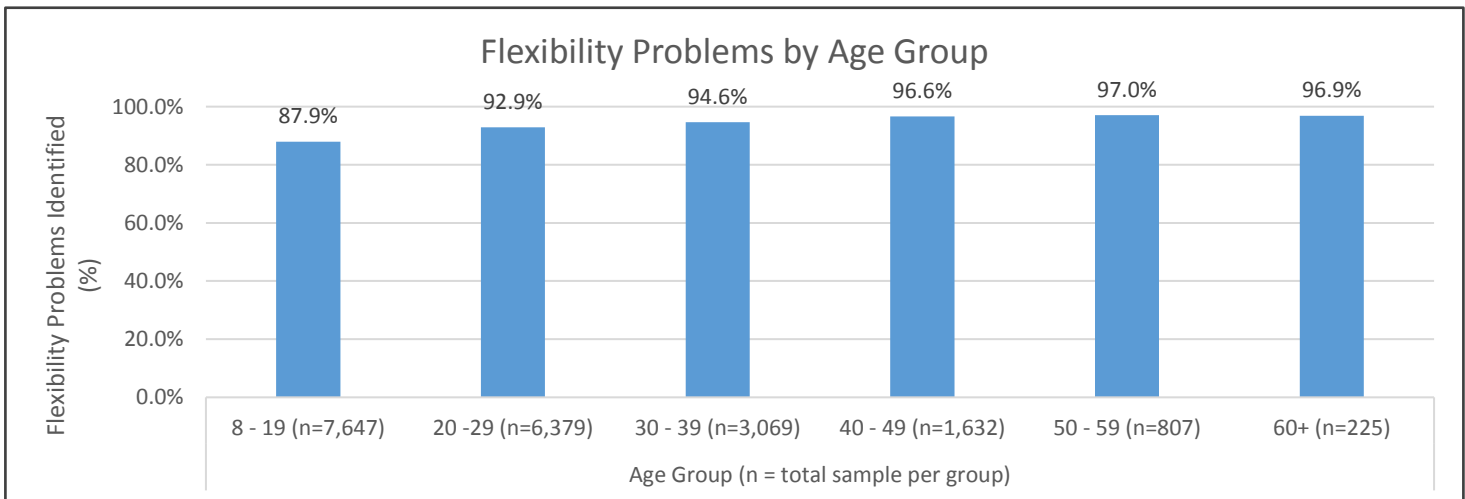
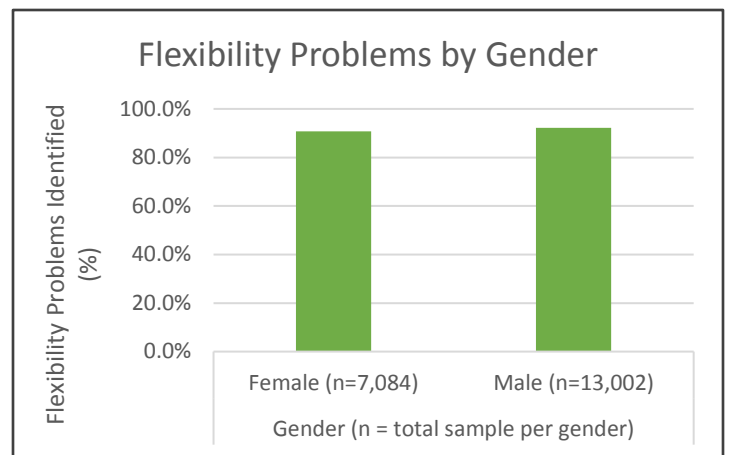
<sup>2</sup> An athlete has flexibility problems if at least one problem with the knees, ankles, hips, or shoulders (on either side of the body) is identified during the FUNfitness exam.

<sup>3</sup> An athlete has strength problems if at least one problem with the legs, abdominals, forearms, hands, or other upper extremities (on either side of the body) is identified during the FUNfitness exam.

<sup>4</sup> An athlete has balance problems if at least one balance problem (on either side of the body) is identified during the FUNfitness exam.

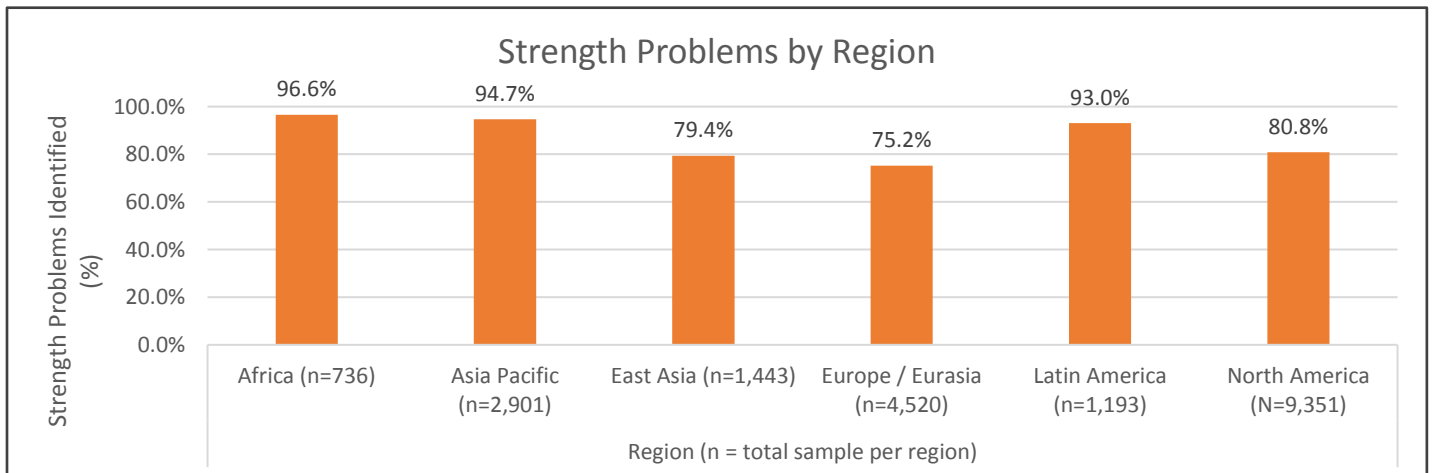
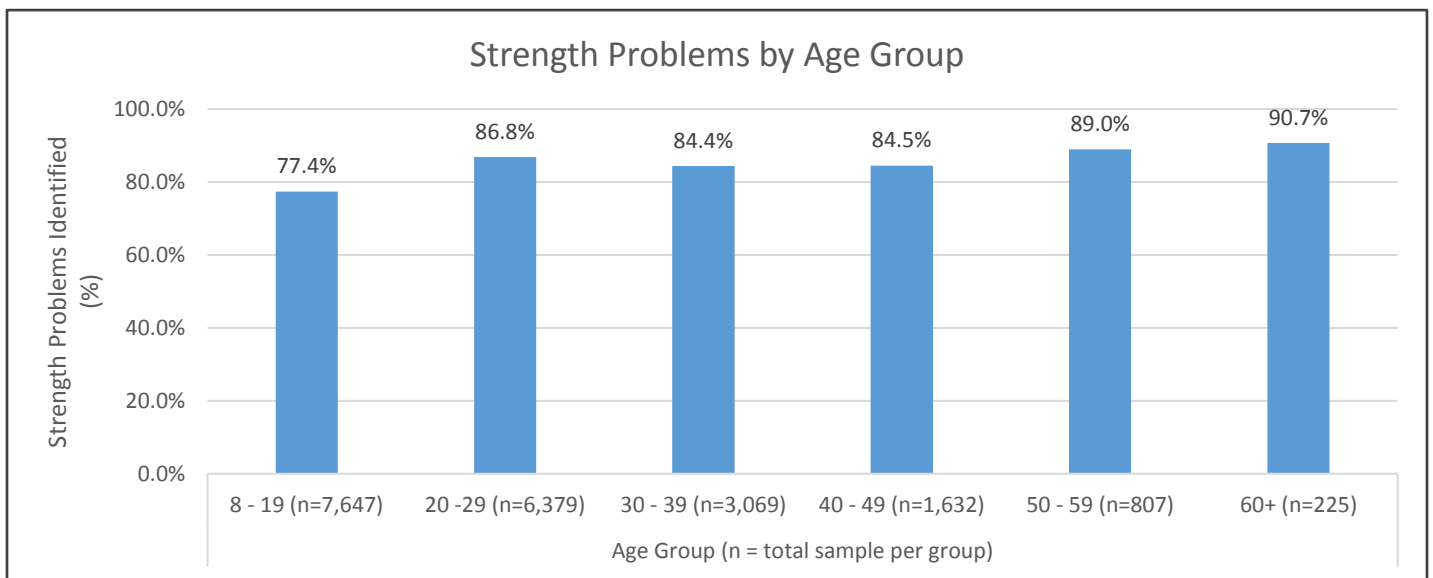
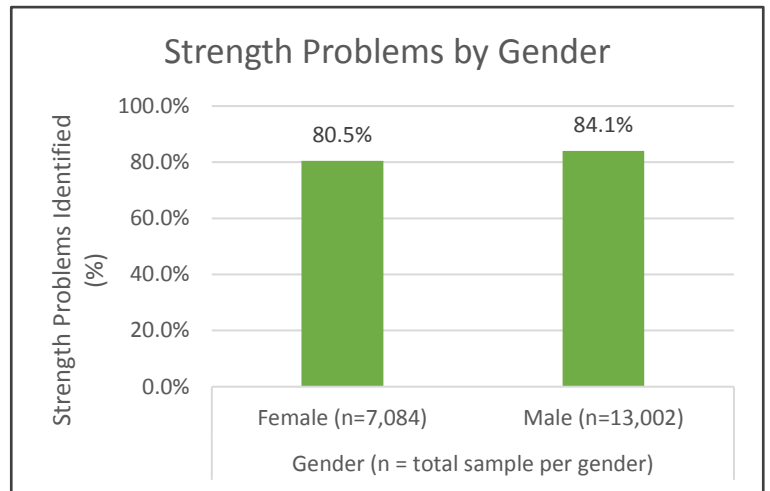
## Flexibility Problems

Combined 2014 and 2015 data show females had lower rates of flexibility problems compared to males. Prevalence of flexibility problems was highest in the 50 – 59 age group. Latin America had the highest rates of flexibility problems and Africa had the lowest.



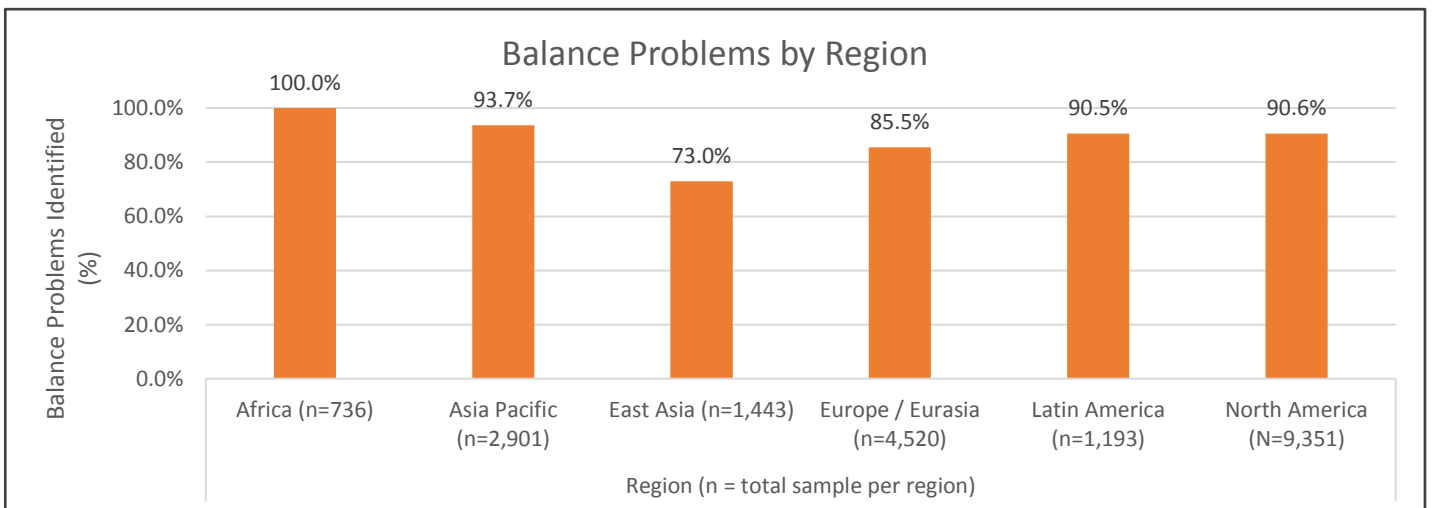
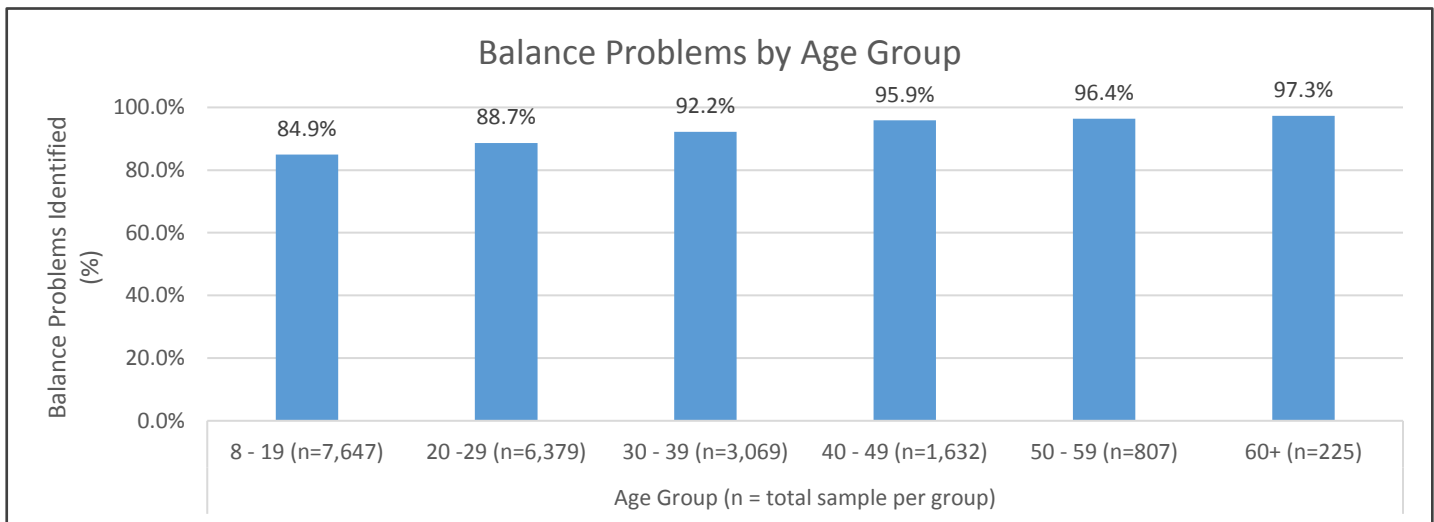
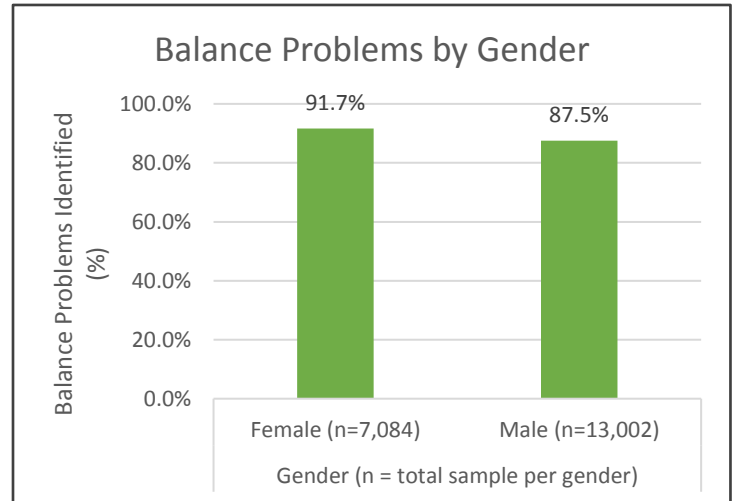
## Strength Problems

Males had higher rates of strength problems compared to females. Prevalence of strength problems was highest in the 60+ age group and the Africa region and lowest in the 8 – 19 age group and Europe / Eurasia region.



## Balance Problems

Females had a higher rate of balance problems compared to males. Prevalence of balance problems was highest in the 60+ age group and the Africa region and lowest in the 8 – 19 age group and the East Asia region.





Opening Eyes conducts extensive vision assessments and gives out prescription eyeglasses and sports eyewear. In 1997, Special Olympics established Opening Eyes. Opening Eyes and Special Smiles jointly formed the basis of the Special Olympics Healthy

Athletes initiative in 1997. Through the global partnership of Special Olympics and Lions Clubs International, Special Olympics athletes receive extensive vision and eye health tests, refraction for those requiring further exam, prescription eyeglasses, protective sports eyewear (either with a prescription or simply protective), and referral for follow-up care. Sunglasses have also been provided more recently for those athletes who go through the Opening Eyes program and do not need corrective lenses for distance viewing.

### Goals

1. Increase access to eye care for Special Olympics athletes, as well as all people with intellectual disabilities.
2. Raise eye care professionals' awareness of vision and eye health concerns of people with special needs, including difficulties involved in accessing treatment.
3. Train health care professionals, students and others about the needs and care management of people with intellectual disabilities.
4. Develop a body of knowledge about vision and eye health of children and adults with special needs.

### Global Importance and Impact

The measures from the assessment can be found on the Opening Eyes form in Appendix IV. In 2015, over 22,756 Opening Eyes assessments were conducted with athletes from 79 countries at 132 events. 14,643 Opening Eyes assessments were entered into HAS. The results show that:

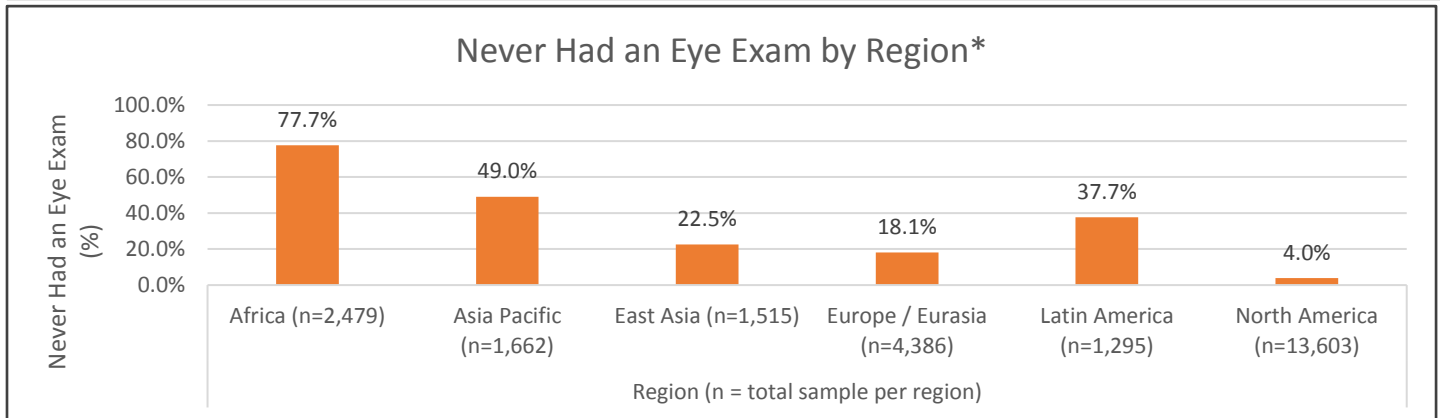
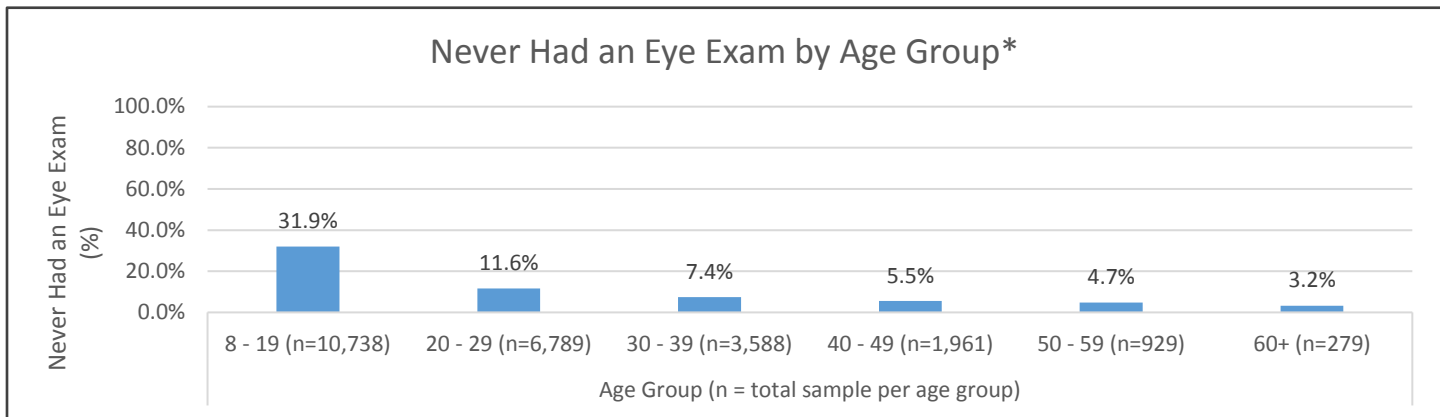
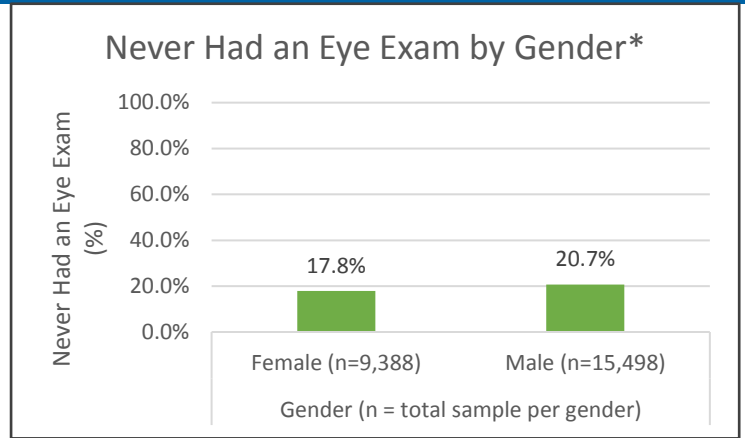
- 19% have never had an eye exam
- 16% have an eye disease<sup>5</sup>
- 41% need new prescription glasses

The data analysis on the following pages is based on the 33,665 Opening Eyes assessments in HAS from 2014 – 2015.

<sup>5</sup> Eye disease can include external eye health problems (e.g., lid anomaly, blepharitis, conjunctivitis) as well as internal eye health problems (e.g., cataracts, coloboma, retinal anomaly).

## Never Had an Eye Exam: Self-Reported by Special Olympics athletes

Combined 2014 and 2015 data on show females had a lower rate of never having an eye exam than males. Prevalence of never having an eye exam was highest in the 8 – 19 age group and the Africa region, and lowest in the 60+ age group and North America.

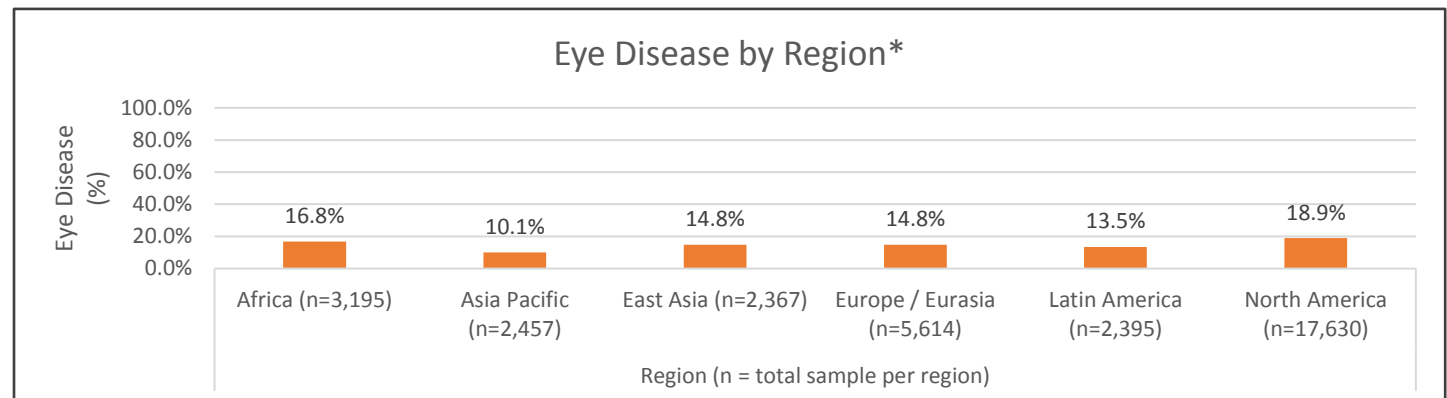
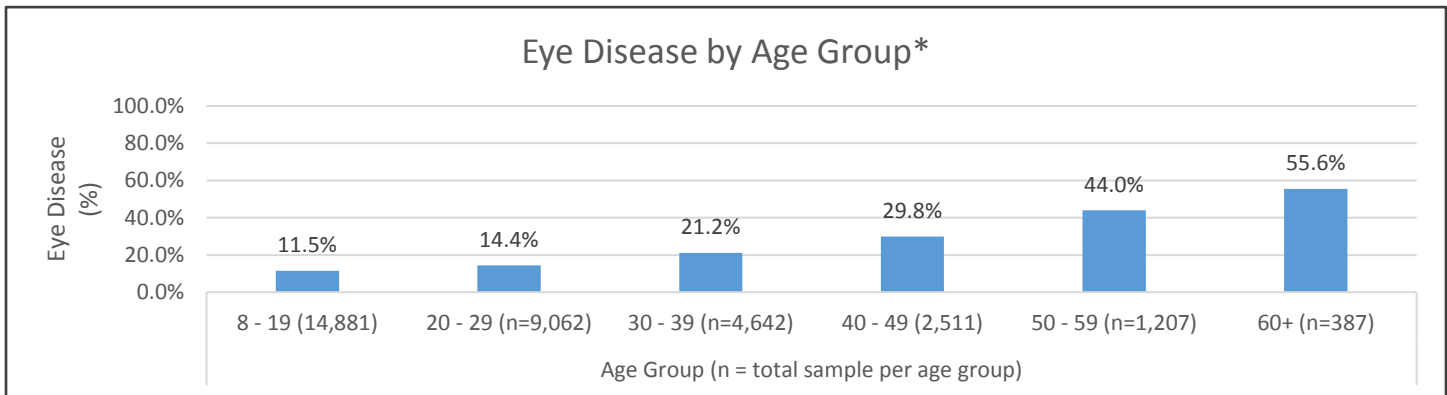
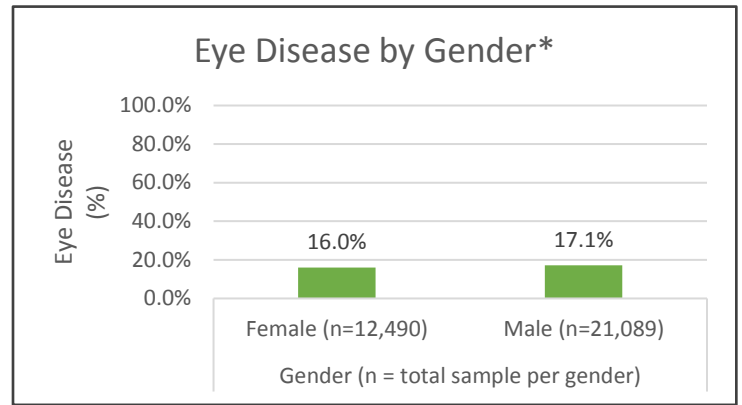


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who responded to the question of their last eye exam.

## Eye Disease

Combined 2014 and 2015 data show females had slightly lower rates of eye disease than males. Prevalence of eye disease was highest in the 60+ age group. North America had the highest rates of eye disease and Asia Pacific had the lowest.

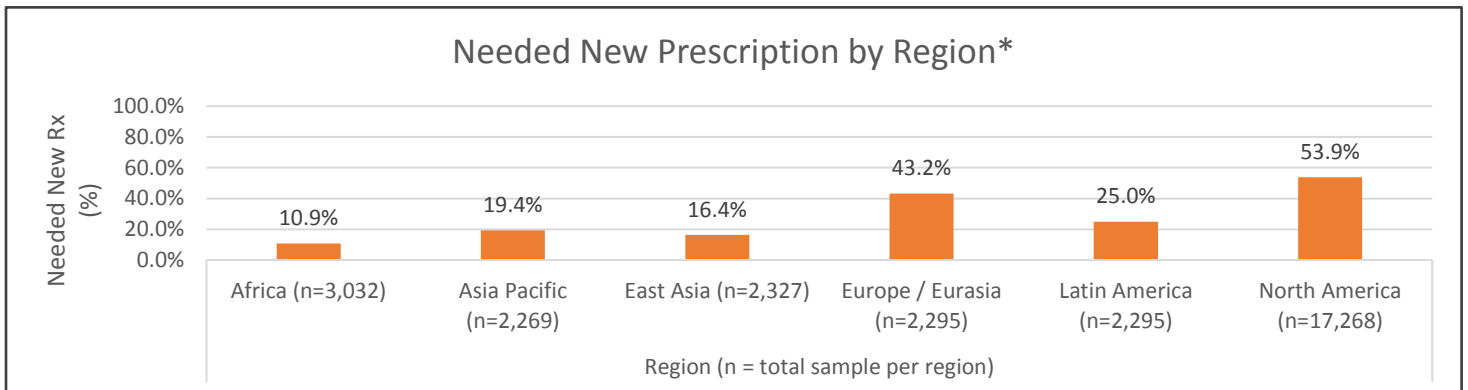
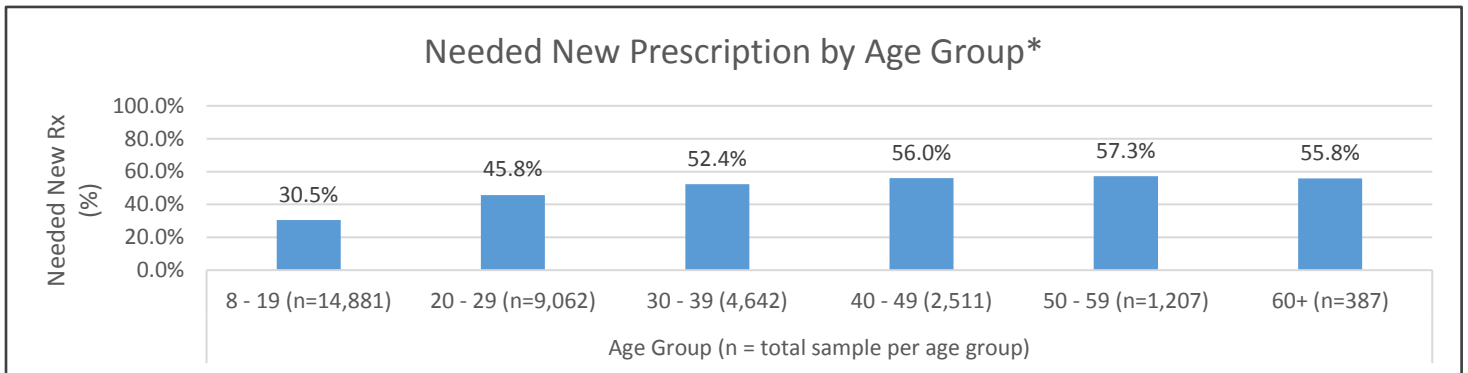
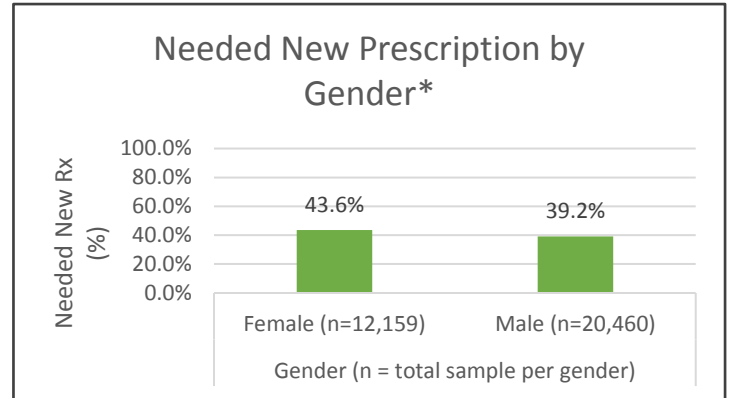


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who completed the Opening Eyes assessment.

## Needed New Prescription

Combined 2014 and 2015 data show females had higher rates of new prescription need than males. Prevalence of needing new eye prescriptions was highest in the 50-59 age group. North America had the highest rates of new prescription need and Africa had the lowest.



\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who completed the Opening Eyes assessment.





Special Smiles offers dental exams, health education and prevention services, and refers athletes to potential sources of treatment and follow-up care. In 1997, Healthy Athletes, in cooperation with the Division of Oral Health at the Centers for Disease Control and Prevention (CDC) developed the Special Smiles protocol to evaluate oral health. Special Smiles provides SO athletes with an oral health exam, education about the importance of good oral hygiene habits, and instructions in correct tooth brushing and flossing methods.

### Goals

1. Increase access to dental care for Special Olympics athletes, as well as all people with intellectual disabilities.
2. Raise dental professionals' awareness of the oral health concerns of people with special needs, including difficulties involved in accessing care.
3. Train health care professionals, students and others about the needs and care management of people with intellectual disabilities.
4. Develop a body of knowledge about the oral health care needs of children and adults with intellectual disabilities.
5. Provide a list of regional dental professionals who care for people with special needs to all athletes who participate in Special Smiles.

### Global Importance and Impact

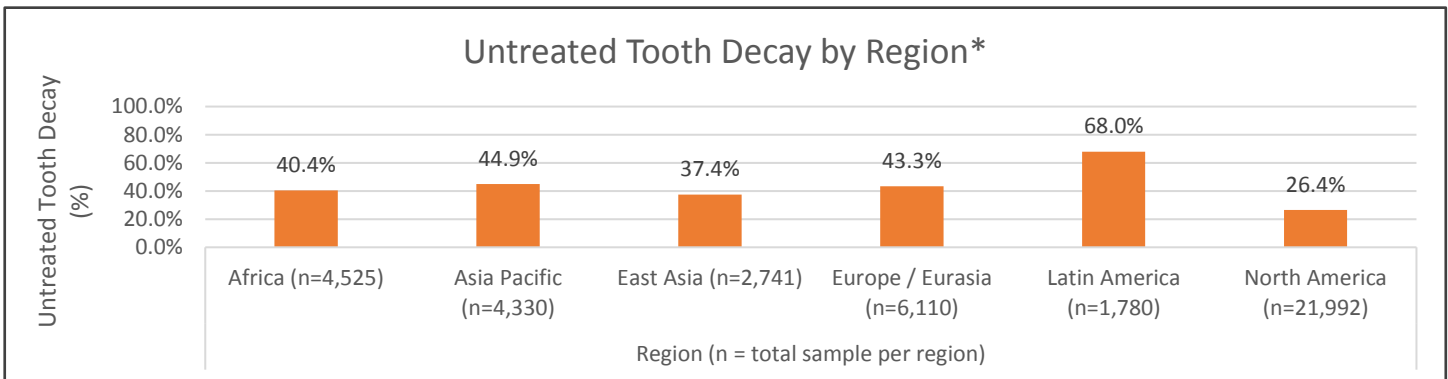
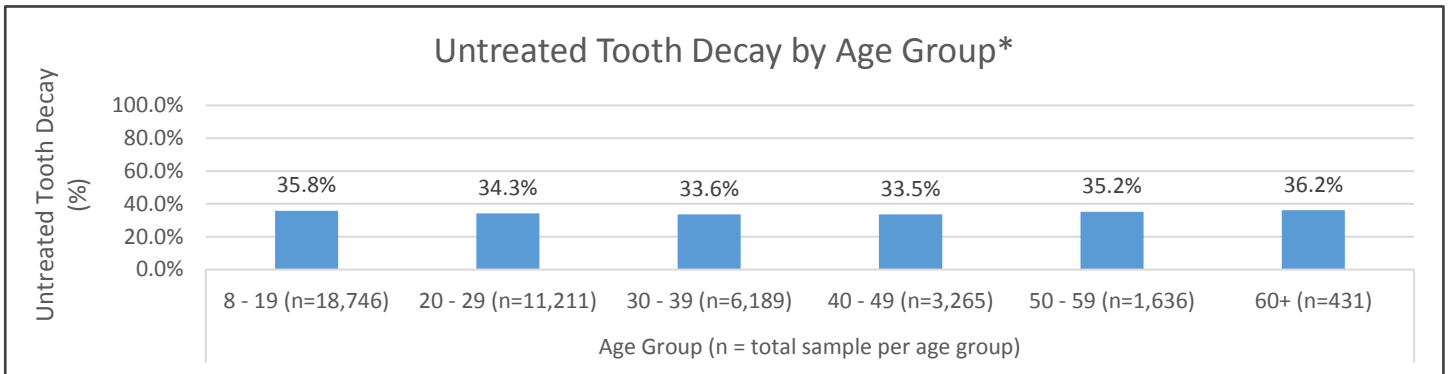
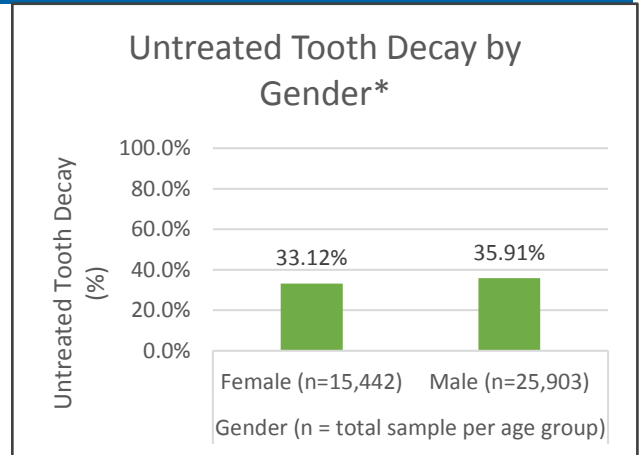
The measures from the examination can be found on the Special Smiles form in Appendix IV. In 2015, over 31,354 Special Smiles exams were conducted with athletes from 79 countries at 202 events. 20,815 Special Smiles exams were entered into HAS. The results show that:

- 36% have untreated tooth decay
- 46% have gingival signs
- 13% are in need of urgent care

The data analysis on the following pages is based on the 45,524 Special Smiles exams in HAS from 2014 – 2015.

## Untreated Tooth Decay

Combined 2014 and 2015 data show females had lower rates of untreated tooth decay than males. Prevalence of untreated tooth decay was highest among the youngest and oldest age groups. Latin America had the highest rates of untreated tooth decay and North America had the lowest.

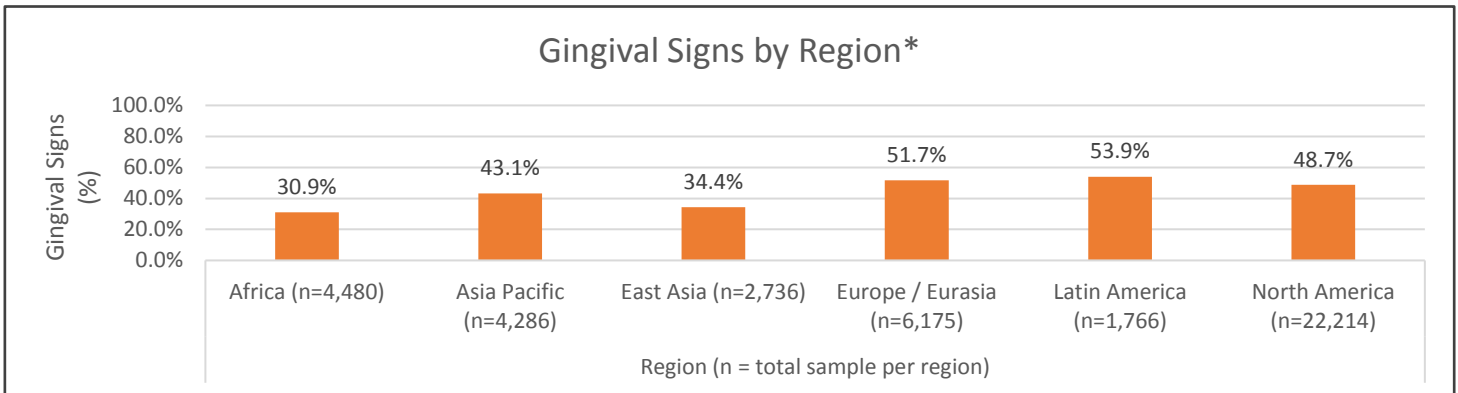
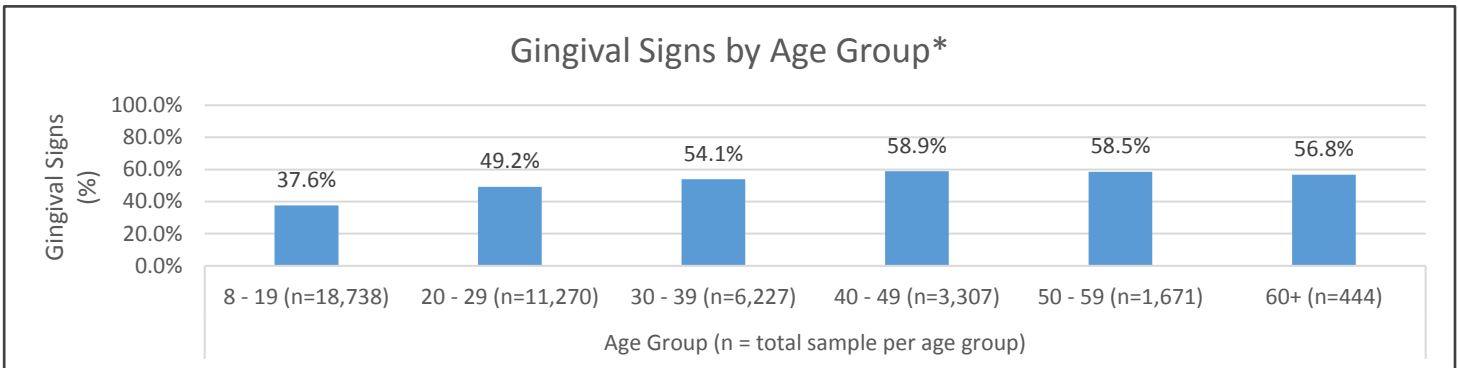
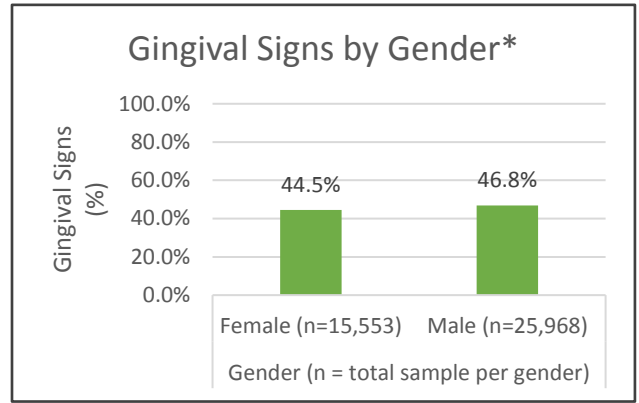


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on number of the athletes who were examined for tooth decay.

## Gingival Signs

Combined 2014 and 2015 data show females had a lower rate of gingival signs than males. Prevalence of gingival signs was higher in older age groups. Latin America had the highest rates of gingival signs and Africa had the lowest.

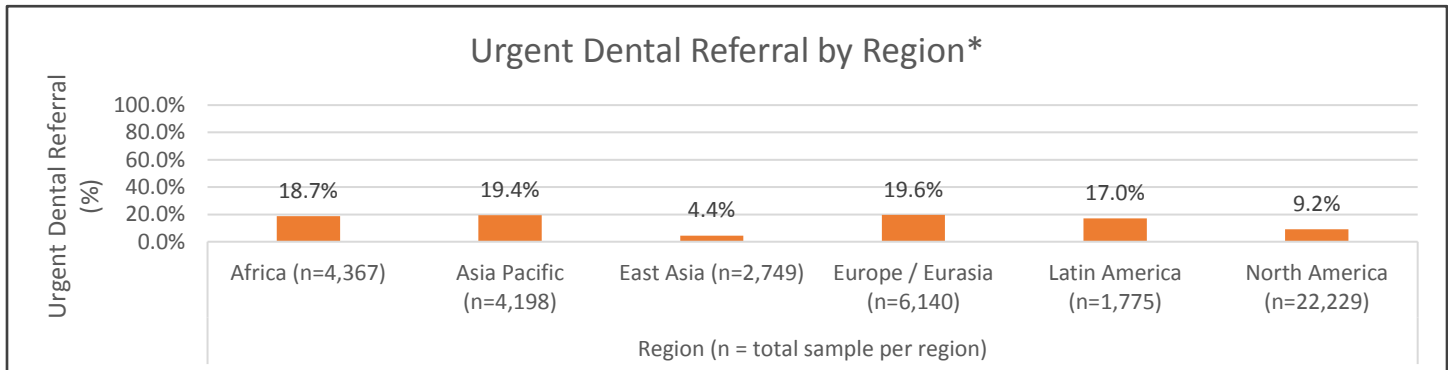
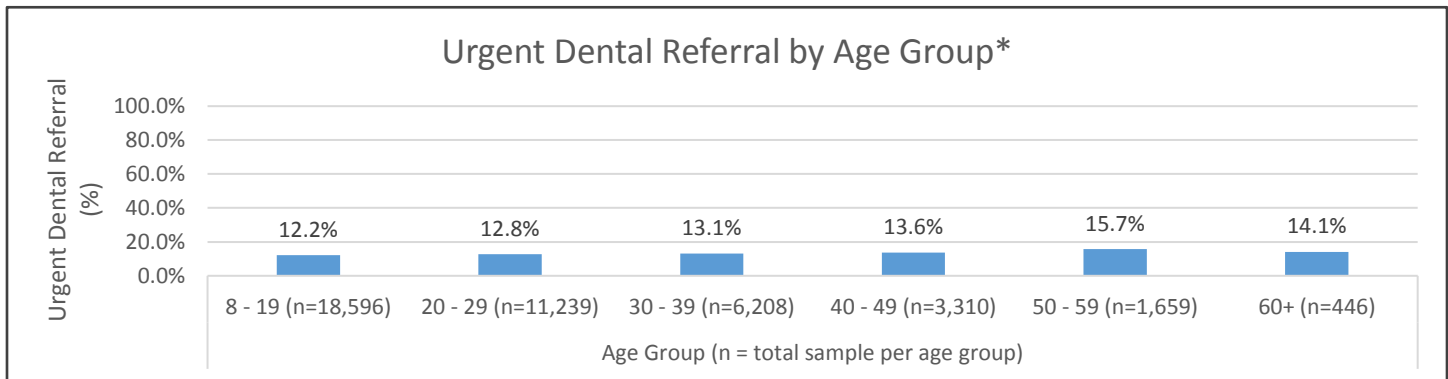
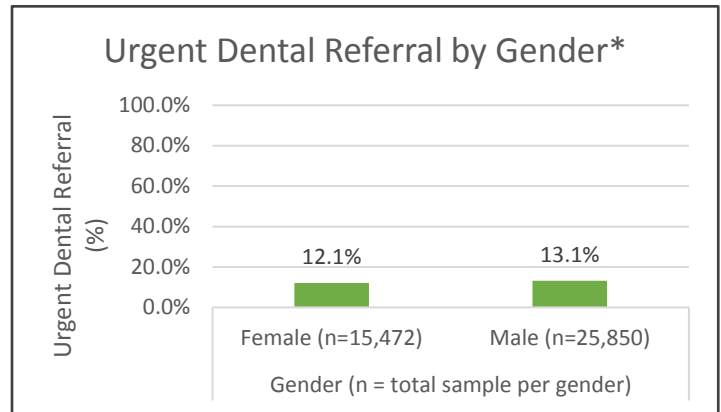


\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on number of the athletes who were examined for gingival signs.

## Urgent Dental Referral

Combined 2014 and 2015 data show males and females had about the same rate of urgent dental referrals. Prevalence of urgent dental referrals was highest in the 50 - 59 age group. Rates of urgent dental referrals were highest in Europe / Eurasia and lowest in East Asia.



\*Gender, Age group, and Regional data shown above are based on 2014 – 2015 combined data.

Note: Percentages are based on the number of the athletes who received a referral after completing the Special Smiles exam.

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# Special Olympics Healthy Hearing



## Healthy Hearing

### Introduction

Several Special Olympics athletes have a hearing loss or other ear problems, which influences communication abilities, quality of life, social participation and health. Healthy Hearing is designed to assess and report the prevalence of hearing loss among Special Olympics athletes as a means of focusing attention on the hearing healthcare needs of people with

intellectual disabilities. It was developed in 1998, following a public health screening and follow-up model. Additionally, Healthy Hearing identifies athletes with hearing loss and ear health problems through hearing exams and testing; notifies/counsels them about needed follow-up care; and whenever possible, provides follow-up care on site at Special Olympics events. Healthy Hearing also informs athletes, coaches and caregivers about the prevention of hearing loss by providing informative brochures to them at events and through a website.

### Goals

1. Increase access to hearing care for Special Olympics athletes, as well as all people with intellectual disabilities.
2. Raise hearing health professionals' awareness of the hearing concerns of people with special needs, including difficulties involved in accessing care.
3. When possible, provide a list of regional hearing health professionals who care for people with special needs to all athletes who participate in Healthy Hearing.
4. Develop a body of knowledge about the ear canal hygiene of children and adults with intellectual disabilities.
5. Train health care professionals, students and others about the needs and care management of people with intellectual disabilities.

### Global Importance and Impact

The measures from the examination can be found on the Healthy Athletes Healthy Hearing form in Appendix IV. In 2015, over 17,577 Healthy Hearing exams were conducted, with athletes from 63 countries at 113 events. 9,536 Healthy Hearing exams were entered into HAS. The results show that:

- 44% have blocked or partially blocked ear canals<sup>6</sup>
- 24% failed Puretone hearing test
- 7% have permanent hearing loss<sup>7</sup>

The data analysis on the following pages is based on the 22,073 Healthy Hearing exams in HAS from 2014 – 2015. Gender, age group, and regional data presented below are based on 2014 – 2015 combined data. Percentages are based on the number of athletes who completed the Healthy Hearing exam.

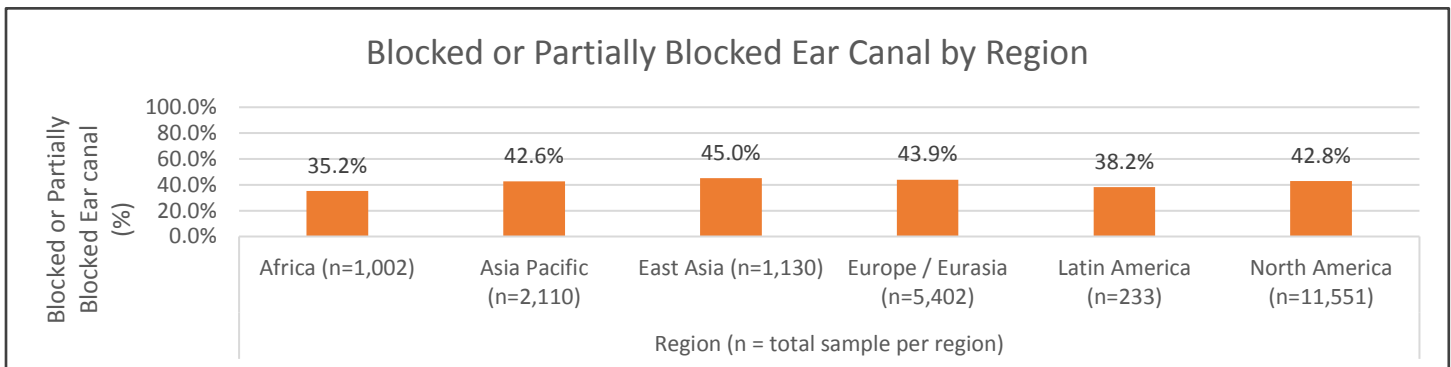
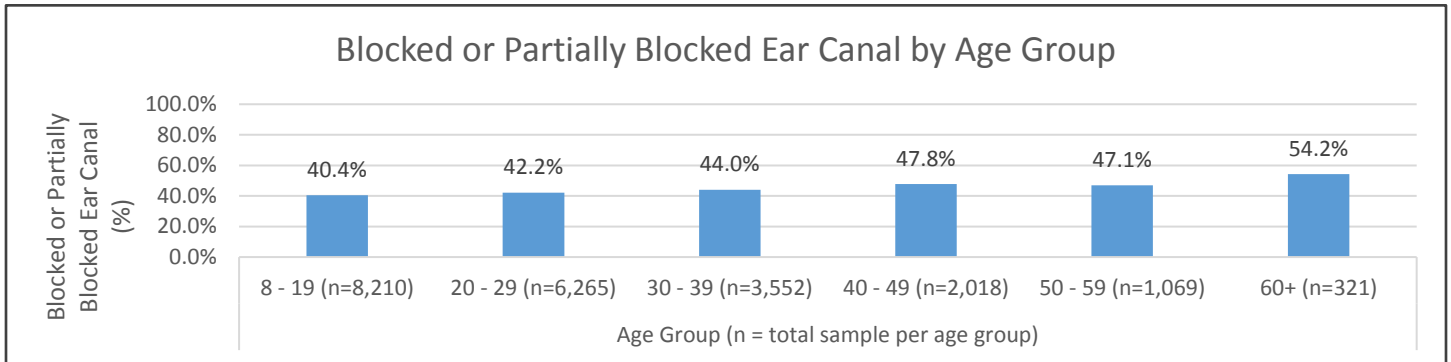
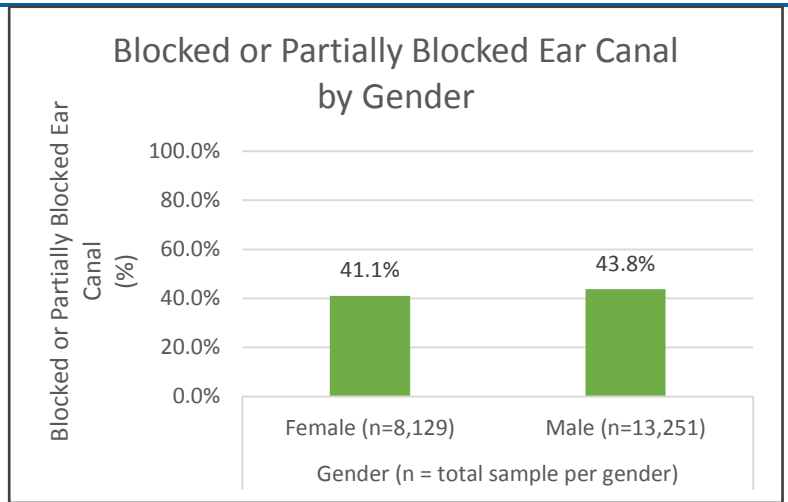
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<sup>6</sup> An athlete has blocked or partially blocked ear canals if an exam shows any blockage due to cerumen or foreign bodies in either ear canal.

<sup>7</sup> An athlete has permanent hearing loss if he or she passes the tympanometry screening in both ears, does not have blocked or partially blocked ear canals, and does not pass the PureTone hearing test.

## Blocked or Partially Blocked Ear Canal

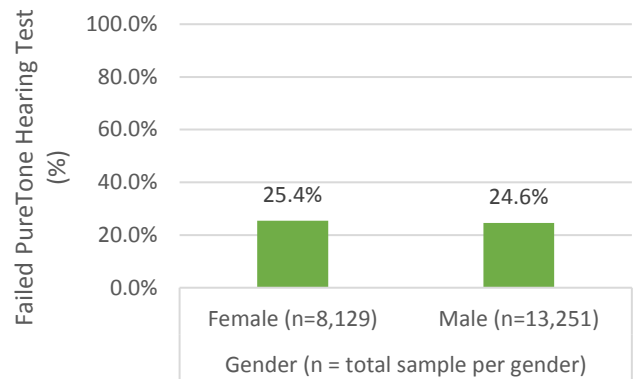
Combined 2014 and 2015 data show females had a lower rate of blocked or partially blocked ear canals compared to males. Prevalence of blocked or partially blocked ear canals was highest in the 60+ age group. Rates of blocked or partially blocked ear canals were highest in East Asia and lowest in Africa.



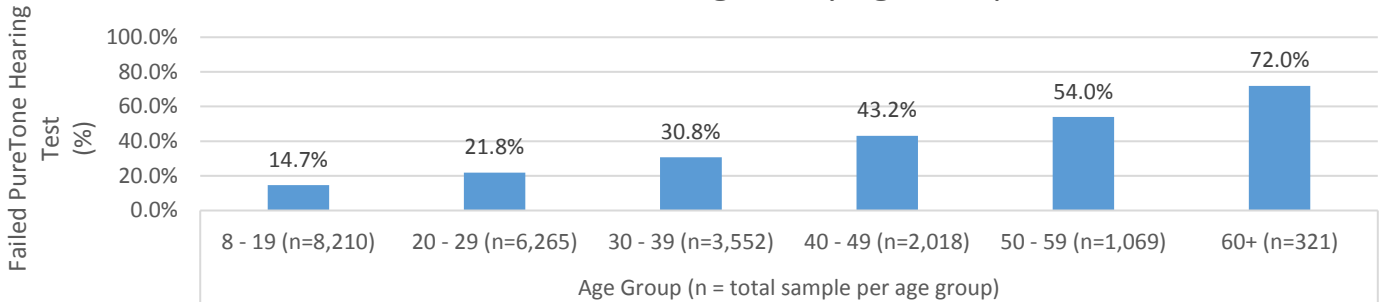
## Failed PureTone Hearing Test

Combined 2014 and 2015 data show males and females had about the same rate of failed PureTone hearing tests. Prevalence of failed PureTone hearing tests was highest in the 60+ age group. Rates of failed PureTone hearing tests were highest in Middle East North Africa and lowest in East Asia.

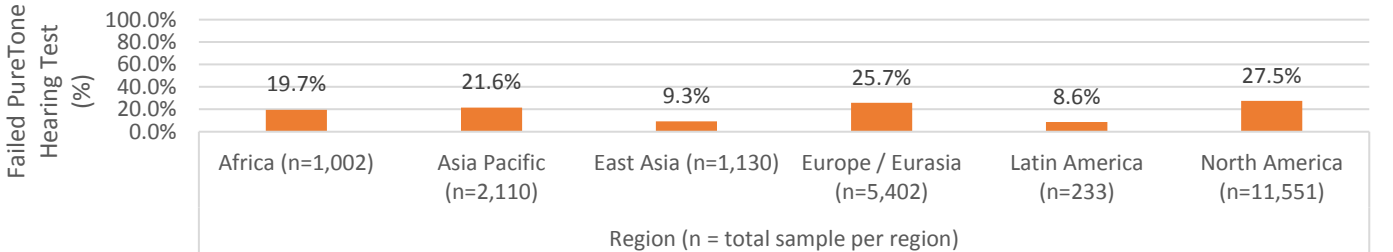
### Failed PureTone Hearing Test by Gender



### Failed PureTone Hearing Test by Age Group

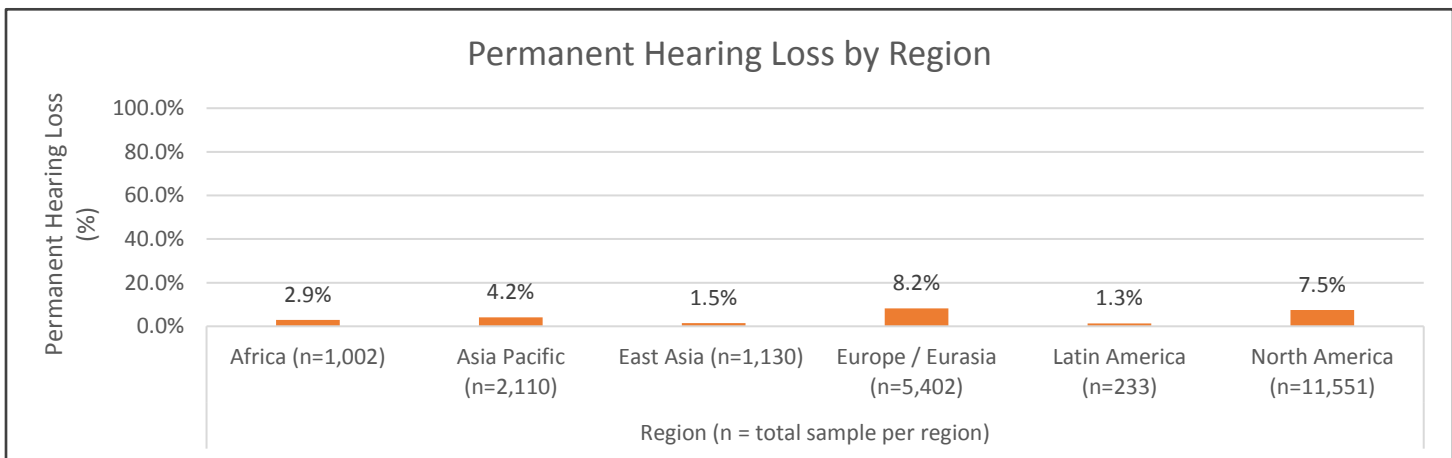
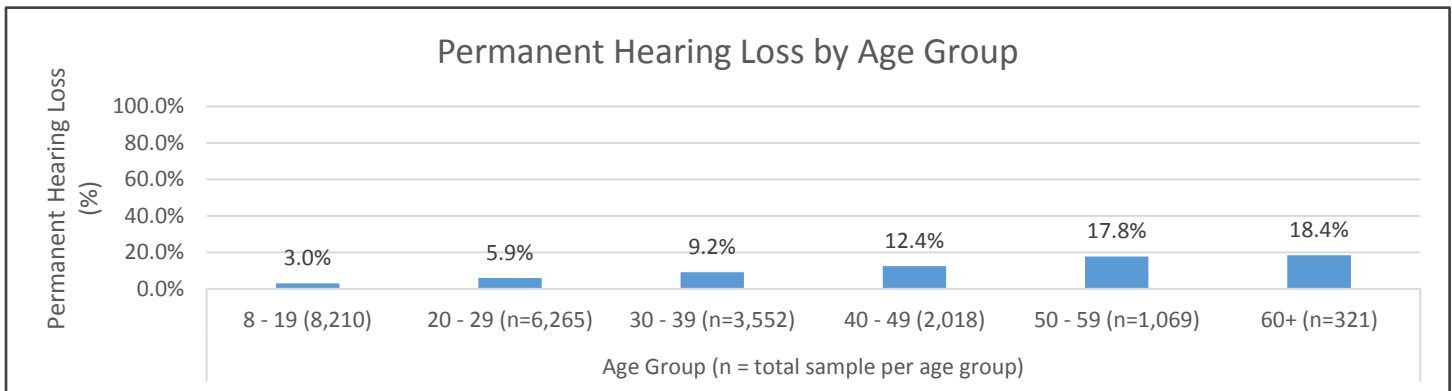
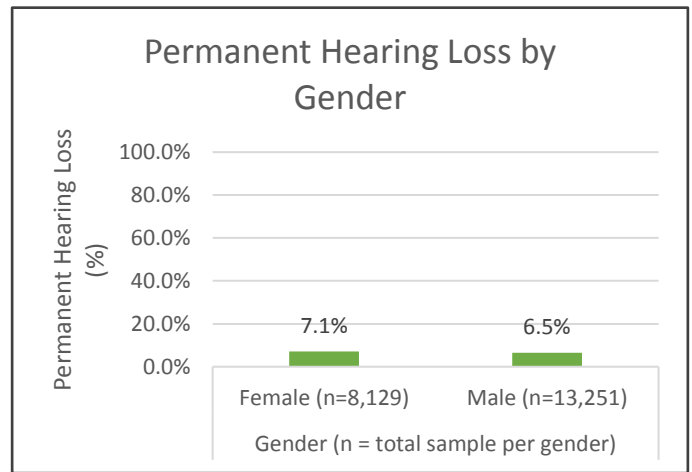


### Failed PureTone Hearing Test by Region



## Permanent Hearing Loss

Combined 2014 and 2015 data show males and females had about the same rate of permanent hearing loss. Prevalence of permanent hearing loss increased with age and was highest in the 60+ age group. Rates of permanent hearing loss were highest in Europe / Eurasia and lowest in Latin America.





# Implications

These results have a number of important implications. First, the prevalence of most health indicators are alarmingly high regardless of gender, age, or region. Second, we observed some interesting differences by gender and age. For example, the 20-29 age group had rates as high as the oldest age group for gait abnormalities. Additionally, 8-19 year olds had the highest rate of never having had an eye exam (which can greatly affect educational achievement as well as participation in sports), and had the second highest rate of untreated tooth decay. The prevalence of flexibility, strength, and balance problems within this population was also very high regardless of gender, age, or region. While comparable data for the general population is not currently available, literature suggests that flexibility, strength, and balance problems disproportionately affect individuals with ID.

There were also some differences by gender. For example, females had lower rates of low bone mineral density despite having a higher risk for osteoporosis in the general population due to estrogen and biological influences. Similarly, females had higher rates of overweight in youth and higher rates of obesity among adults. This may speak to the life course effect of BMI (i.e., females are more likely to be overweight in adolescence, and continue gaining weight into adulthood), which highlights the need for early interventions such as Special Olympics sports and Healthy Athletes. While males were more likely to have never had an eye exam, females were more likely to need a new prescription.

The greatest differences were observed by region. This is unsurprising, due to both the social and economic determinants of health that vary widely by country, but also due to cultural differences in health promotion and healthcare. This information is critical to understanding how to further improve the impact of Healthy Athletes around the world.

Although we do not have comparable measures in the general population for most of the health indicators, we do find that individuals with ID are nearly 10% more likely to be obese. The health issues described in this report are strong risk factors for serious and/or chronic health problems, and more importantly, have a significant impact on quality of life. Healthy Athletes has allowed us to understand the magnitude of these issues, but more needs to be done to address the systemic barriers to achieving equitable health that individuals with ID face.

# Conclusion

Special Olympics welcomes working with external partners, including students, to analyze Healthy Athletes data for research purposes. Data can be shared by filling out the data access and compliance form and the project proposal form, which is included in Appendices II and III. Appendix I also contains frequently asked questions related to HA data. Special Olympics is also open to collaboration on research projects and has the ability to provide some statistical support. Questions outside the scope of the FAQ document should be directed to [healthdata@specialolympics.org](mailto:healthdata@specialolympics.org) or **Molly Sadowsky (Manager, Health Data) at 202-824-0334**.



# Appendices

## Appendix I: U.S. General Population Comparison of Health Indicators

When comparing the prevalence rates of a number of health indicators in Special Olympics athletes to those in the general population, we see a number of inconsistencies. One of the largest discrepancies exists in obesity. In Special Olympics athletes, 45.6% of the adult population in the United States were obese compared to 36.4% of the U.S. general population. However, while the prevalence of being obese or overweight is higher in adult Special Olympics athletes, a higher percent are sufficiently active compared to the general population.

**Table 4. Comparative health indicators for Special Olympics athletes and the general population in the United States (2007-2015)**

Indicator (Age)	Special Olympics athletes (%)	General population (%)
<b>Untreated Tooth Decay</b> in Special Olympics athletes and general population (18-64)	26.4	23.7 <sup>1</sup>
<b>Obesity</b> in Special Olympics athletes and general population – (BMI≥30) (20+)	45.6	36.4 <sup>2</sup>
<b>Overweight or Obese</b> in Special Olympics athletes and general population – (BMI≥25) (20+)	74.0	69.5 <sup>2</sup>
<b>Sufficient Aerobic activity</b> in Special Olympics athletes and general population. (3 or more days per week) (18+)	64.2	49.6 <sup>3</sup>
<b>Insufficient Aerobic activity</b> in Special Olympics athletes and general population (1-2 days per week) (18+)	30.6	20.2 <sup>3</sup>
<b>Inactive - Aerobic activity</b> in Special Olympics athletes and general population (No days per week) (18+)	5.2	30.2 <sup>3</sup>

1. Blackwell, Debra L., Jacqueline W. Lucas, and Tainya C. Clarke. "Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2012." Vital and Health Statistics. Series 10, Data from the National Health Survey, no. 260 (February 2014): 1–161.
2. National Center for Health Statistics (US). Health, United States, 2015: With Special Feature on Racial, Ethnic, and Health Disparities. Hyattsville (MD): National Center for Health Statistics (US), 2016. <https://www.ncbi.nlm.nih.gov/pubmed/27308685>.
3. Homa, David M., Linda J. Neff, Brian A. King, Ralph S. Caraballo, Rebecca E. Bunnell, Stephen D. Babb, Bridgette E. Garrett, Connie S. Sosnoff, Lanqing Wang, and Centers for Disease Control and Prevention (CDC). "Vital Signs: Disparities in Nonsmokers' Exposure to Secondhand Smoke--United States, 1999-2012." MMWR. Morbidity and Mortality Weekly Report 64, no. 4 (February 6, 2015): 103–8.

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## Appendix II: HAS Data Sharing Frequently Asked Questions

### Background and History

#### What is Special Olympics?

Special Olympics (SO) is a global movement that unleashes the human spirit every day around the world through the transformative power and joy of sport. Through programming in sports, health, education and community building, Special Olympics is tackling the inactivity, stigma, isolation, and injustice that people with intellectual disabilities (ID) face. Our work goes far beyond sports events, driving social change and building inclusive communities that enable full social participation and life-long fitness for people with ID throughout the world. With 220 country or state Programs<sup>8</sup>, Special Olympics is providing opportunities for more than 4.7 million athletes, one million volunteers and millions more people including family members, supporters, and fans.

#### What is Healthy Athletes?

People with ID have poorer health, more specialized health care needs, and greater difficulty accessing health care services compared to the general population. To address these problems, Special Olympics International (SOI) implemented the Healthy Athletes® program to:

- Provide athletes with health exams and referrals for follow-up care when needed;
- Provide training for healthcare providers in working with patients with intellectual disabilities;
- Provide the basis for improved programs & policies.

Since 1997, more than 1.7 million Healthy Athletes exams have occurred in 134 countries, and data from these exams make up the world's largest database on the health of people with ID. The mission of the Special Olympics Healthy Athletes program is to improve the ability of athletes with ID to train and compete in Special Olympics. Healthy Athletes enables athletes to improve their health and well-being on and off the field by providing health screenings, services, and education directly to athletes; training healthcare professionals to better treat people with ID; and analyzing and disseminating findings from health exams to raise awareness among policymakers and the media about the health needs within this population.

#### What health topics are included in Healthy Athletes?

Currently, Special Olympics conducts eight disciplines of health exams free of charge for athletes:

- **Fit Feet** is a podiatric screening evaluating ankles, feet, lower extremity biomechanics, and proper shoe and sock gear.
- **FUNfitness**, developed in collaboration with the American Physical Therapy Association, is a fitness screening program designed to assess and improve all components of fitness (strength, flexibility, balance, and aerobic conditioning), and to educate on the importance of and methods for becoming and staying physically fit.
- **Health Promotion** provides clinical screening in bone density, blood pressure, and BMI and offers health information and education in the areas of nutrition, sun safety, bone density, tobacco cessation, and physical fitness.

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<sup>8</sup> Special Olympics Programs (SO Programs) are independent 501(c)3 organizations that are accredited to carry the Special Olympics name. Generally these Programs operate at the state level in the US (e.g., SO Florida) and at the national level outside the US (e.g. SO Malawi).

- **Healthy Hearing** is a hearing exam designed to ensure proper audiological care and to assess ear hygiene, as well as fit athletes with hearing aids where appropriate.
- **MedFest** facilitates the acquisition of the standard sports physical required under the General Rules of SOI. The exam consists of medical history, height and weight, blood pressure, cardiology test, musculoskeletal test, orthopedic tests, and abdominal evaluation.
- **Special Olympics-Lions Clubs International Opening Eyes** program is a vision and eye health assessment. Opening Eyes offers prescription eyewear, sunglasses, and sports goggles to SO athletes.
- **Special Smiles** offers oral screening, oral health information, and instructions on brushing and flossing properly, as well as preventative supplies such as toothpaste, toothbrushes, and floss.
- **Strong Minds** is the newest discipline Special Olympics offers and is still in the pilot phase. Data has not yet been collected for this discipline.

## Data Collection

### How are Healthy Athletes data collected?

Each of these disciplines has specific written and scientifically validated protocols that must be followed when conducting HA events. All of the Healthy Athletes disciplines use a standardized form to collect data during athlete exams. Typically, during or after each event, data from the exam forms are entered into the Healthy Athletes Software (HAS) system. It is important to note that SOI only has data for screenings that were entered into the HAS system.

Healthy Athletes events take place nearly every day, around the world. Data are currently available from as far back as 2007. However, there may be multiple records for one individual in each discipline (*See the FAQ "Do athlete records have unique identifiers?"*). On a quarterly basis, this data is pulled from HAS, cleaned, and merged into the existing, discipline-specific historical databases located at SOI headquarters in Washington, D.C.

HAS forms are available at the following links:

- **Fit Feet:** <http://media.specialolympics.org/soi/files/healthy-athletes/2014-Fit-Feet-HAS-Form.pdf>
- **FUNfitness:** <http://media.specialolympics.org/soi/files/healthy-athletes/2014-FUNfitness-HAS-Form.pdf>
- Health Promotion: <http://media.specialolympics.org/soi/files/healthy-athletes/2014-Health-Promotion-HAS-Form.pdf>
- **MedFest\*:** <http://media.specialolympics.org/soi/files/healthy-athletes/Athlete-Registration/SOI-MedicalForm-For-Print.pdf>
- **Healthy Hearing:** <http://media.specialolympics.org/soi/files/healthy-athletes/2014-HealthyHearingHASFormCellPhone.pdf>
- **Opening Eyes:** <http://media.specialolympics.org/soi/files/healthy-athletes/2014-Opening-Eyes-HAS-Form.pdf>
- **Special Smiles:** <http://media.specialolympics.org/soi/files/healthy-athletes/2014-Special-Smiles-HAS-Form.pdf>

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\*Note: MedFest data started being collected with this new form starting in 2015. The data has not yet been entered into HAS for analysis purposes and therefore cannot be shared.

**What is the sample size of the data set(s)?**

There are over 700,000 records in the HAS system. Each discipline contains a varying number of records with 50,000 - 100,000+ records. As of September 2016, the number of screenings in HAS are as follows:

- Fit Feet: 80,803
- Fun Fitness: 85,992
- Health Promotion: 113,222
- Healthy Hearing: 84,894
- Opening Eyes: 155,222
- Special Smiles: 184,571

**Do athlete records have unique identifiers?**

Unfortunately, Special Olympics does not have unique identifiers for all data. SOI is currently working on creating unique record identifiers for each individual in the HAS system.

## Data Analysis

**Is there a codebook or data dictionary researchers can access to analyze data using SAS, SPSS, or other data analysis software?**

SOI is currently in the process of developing a data dictionary to share with researchers conducting analyses using Healthy Athletes data. While this codebook does not yet exist, researchers will find it helpful to use the HAS forms to reference variable names, variable construction, and valid responses. Researchers may also reach out to [healthdata@specialolympics.org](mailto:healthdata@specialolympics.org) with specific questions about the data.

**What demographic data is available from Healthy Athletes data?**

Each discipline provides a comprehensive exam, which includes numerous variables depending on the number of tests offered at each event. Available demographic data includes: gender, date of birth, and home country.

**How has Healthy Athletes data been used in the past?**

Healthy Athletes data are aggregated and analyzed for both administrative and research purposes. Administratively, these data can help, for instance, identify common co-morbidities in order to help guide triage Special Olympics Programs to enable follow-up care or offer wellness opportunities focused on these issues. Additionally, health data from athlete exams is provided to country or State Programs upon request. These reports often include comparisons of various health indicators of the Program to other Programs in the region. They are also used to influence policy and raise awareness among key decision makers. SOI often collaborates with academic partners at universities around the world to analyze and disseminate data through conference presentations and peer-reviewed publications.

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## Strengths and Limitations

### What are the strengths of Healthy Athletes data?

Some strengths of Healthy Athletes data include its size and global nature. The data set is large, robust, and contains observations from 134 countries around the world. HAS is also the world's largest health database on individuals with intellectual disabilities.

### What are the limitations of Healthy Athletes data?

While its global nature strengthens the robustness of Healthy Athletes data, it is also a limitation. Healthy Athletes is run by volunteers, and training and reporting practices may vary by country. Additionally, some of the data collected is based on athletes self-reporting various measures (e.g., tobacco use). There is therefore a degree of inherent reporting bias within the data set(s). Special Olympics does not collect diagnostic data on the type of intellectual disability. Healthy Athletes data also does not include demographic information beyond gender, age, and country. Missing data is another limitation of this dataset, which is in part due to data integrity issues, since exam forms have changed over time for each discipline. Other times, information is simply not entered into HAS. This can be for a variety of reasons, including data entry issues or athletes not completing an exam. Lastly, there are not unique identifiers for the entire dataset.

## Athlete Consent

### How is consent obtained from athletes?

When registering for an event, athletes and/or legal guardians provide the following consent: "I understand my information may be used and shared by Special Olympics to research, share, and respond to needs of Special Olympics athletes (identifying information removed if shared publically)."<sup>9</sup>

## Data Access and Use

### How do I gain access to the data set(s)?

Special Olympics is able to share summary statistics when requested, but access to raw data files for research purposes must comply with the data sharing procedures outlined in the Special Olympics Data Access and Compliance Form (Appendix III). If requesting raw data files, the requestor must also complete the Special Olympics Project Proposal Form (Appendix IV).

### Who can I contact for more information about Healthy Athletes data?

Molly Sadowsky  
Manager, Health Data  
[healthdata@specialolympics.org](mailto:healthdata@specialolympics.org)  
202-824-0334

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<sup>9</sup> The full SO Athlete Release Form (2016) can be found here: <http://media.specialolympics.org/resources/leading-a-program/registration-forms/Release-Form-A4-SO-Logo-Reader-Friendly.pdf>.

## Appendix III: Special Olympics Data Access and Compliance Form

### PURPOSE:

By signing this form you acknowledge that you have requested confidential health data on Special Olympics athletes in electronic format. Furthermore, you agree that if Special Olympics approves your request and shares such information with you, you will adhere to the data sharing procedures listed below. Special Olympics reserves the right in its sole discretion to approve all or a portion of your request.

### Special Olympics Data Sharing Procedures:

- All projects must be approved by the Institutional Review Board (IRB) or ethical committee with whom the researcher is affiliated prior to data sharing. The IRB approval must be shown to Special Olympics before any data is shared.
- Individuals requesting data must have sufficient credentials/background for data analysis, or have a mentor who has proper credentials/background to do so. A resume/CV of the researcher and/or mentor must be included with the Data Access and Compliance Form.
- Data is de-identified and/or encrypted prior to sharing, per the nature of the project and the requirements of the University IRB unless there is a specific, approved reason why identifying information is necessary.
- The Special Olympics Project Proposal Form must be completed and approved by Special Olympics prior to receiving data.
- The Special Olympics Data Access and Compliance Form must be signed and returned to Special Olympics prior to receiving data.

### RESPONSIBILITIES:

This is a **one-time request** for the **single purpose** as noted in the attached proposal form. These data may not be released to third parties without the prior written approval of Special Olympics. Data on individual countries cannot be published without the expressed, formal approval of SOI and the specific country. As a user of Special Olympics data, you agree to:

- Securely store all data that you obtain
- Make every reasonable effort to use appropriate methodology and interpret data accurately
- Use the data only for the purpose indicated in the request
- Submit a new proposal to Special Olympics for approval if you decide to change your research question, topic, or any other information outlined in this proposal
- Notify Special Olympics of your intent to publish or present any findings from the use of these data, submit draft manuscripts/posters/presentations for review, and allow Special Olympics two weeks for review and approval of drafts.
- Acknowledge Special Olympics in publications or presentations (specific language will be provided based on the method of sharing results). If statistical assistance is provided, you agree to list the Special Olympics employee as a co-author.
- Destroy all copies of these data files, including backups -- electronic and/or hardcopy -- within six months after completion of research
- Not use this data for commercial purposes
- Not report this data in a way that is derogatory to Special Olympics or Special Olympics athletes (for more information on appropriate terminology, please see our style guide<sup>10</sup>).

### CERTIFICATION:

By signing below, I understand and agree to my obligations as a responsible user of the data to which I have been granted access.

Name (Print):	
Signature:	
Date:	
Resume/CV(s) attached	<input type="checkbox"/> Personal <input type="checkbox"/> Resume/CV of mentor

<sup>10</sup> 2016 Special Olympics Style Guide available at: <http://media.specialolympics.org/resources/brand-awareness-and-communication/marketing/Special-Olympics-Style-Guide.pdf>.



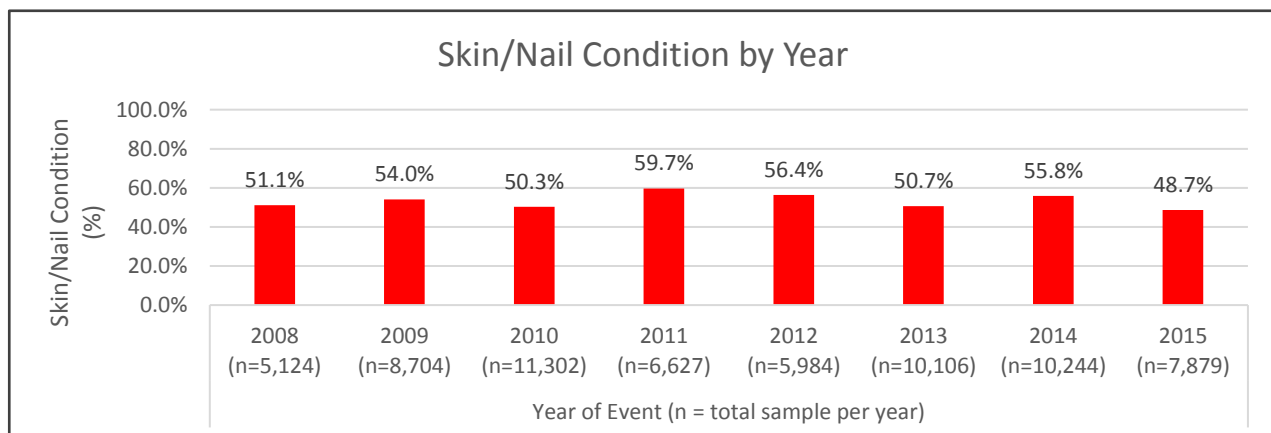
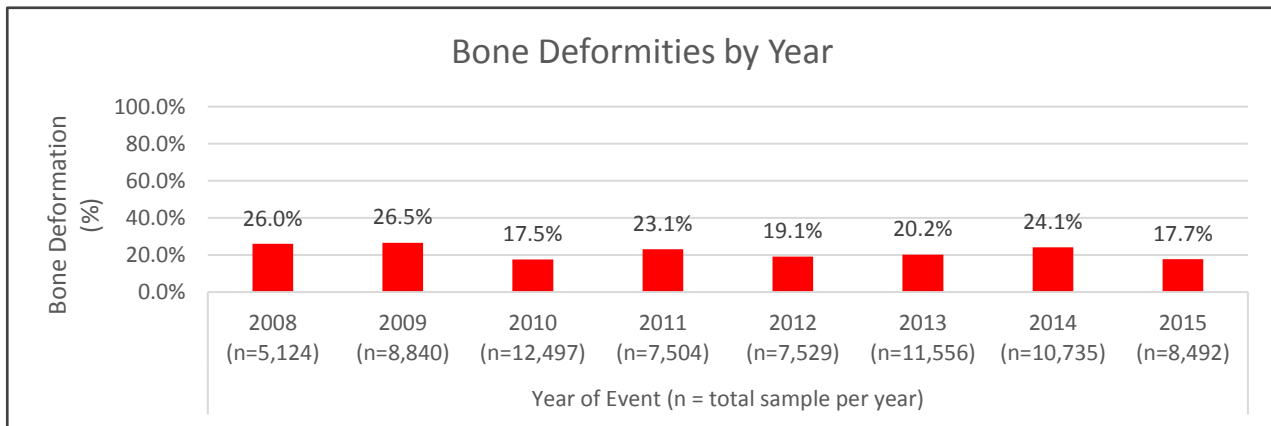
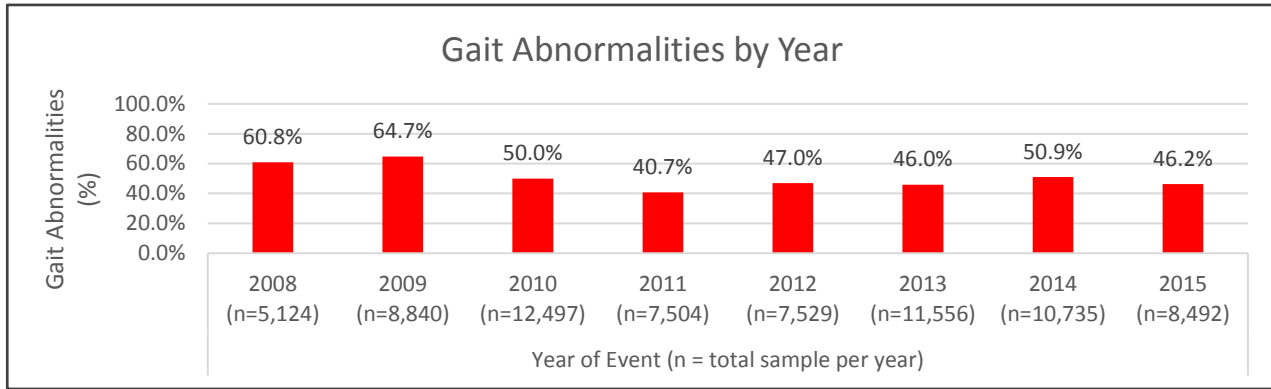
## Appendix IV: Special Olympics Project Proposal Form

<b>Project Proposal: To be completed by requestor.</b>			
<b>Name</b>		<b>Contact Number</b>	
<b>University/Institution</b>		<b>Email Address</b>	
<b>Disciplines Requested</b> <i>(Check one or multiple)</i>	<input type="checkbox"/> Fit Feet <input type="checkbox"/> FUNfitness <input type="checkbox"/> Health Promotion <input type="checkbox"/> Healthy Hearing <input type="checkbox"/> Opening Eyes <input type="checkbox"/> Special Smiles		
<b>Data Specifications Requested</b> <i>(Please include any dates, timeframes, geographic regions or other specifications that will be a focus of the analysis)</i>			
<b>Research Question(s) to be Answered or Project Title</b> <i>(What question(s) will be answered by analysis?)</i>			
<b>Presentation of Findings</b> <i>(How will findings be presented?)</i>	<input type="checkbox"/> Journal Publication (name of journal, if known) <input type="checkbox"/> Conference Presentation (name of conference, if known) <input type="checkbox"/> Conference Poster (name of conference, if known) <input type="checkbox"/> Other (please specify) <input type="checkbox"/> Don't Know		
<b>Request Date</b> <i>(mm/dd/yyyy)</i>			
<b>Permission to Publish Research Question and Contact Information</b>	<p><i>In an effort to promote collaborative, non-repetitive research, SOI's Research and Evaluation Department shares a list of current, ongoing research projects conducted internally and externally. By signing below, you grant SOI permission to publish your research question(s) and contact information:</i></p> <p>_____</p> <p>(Signature)</p>		

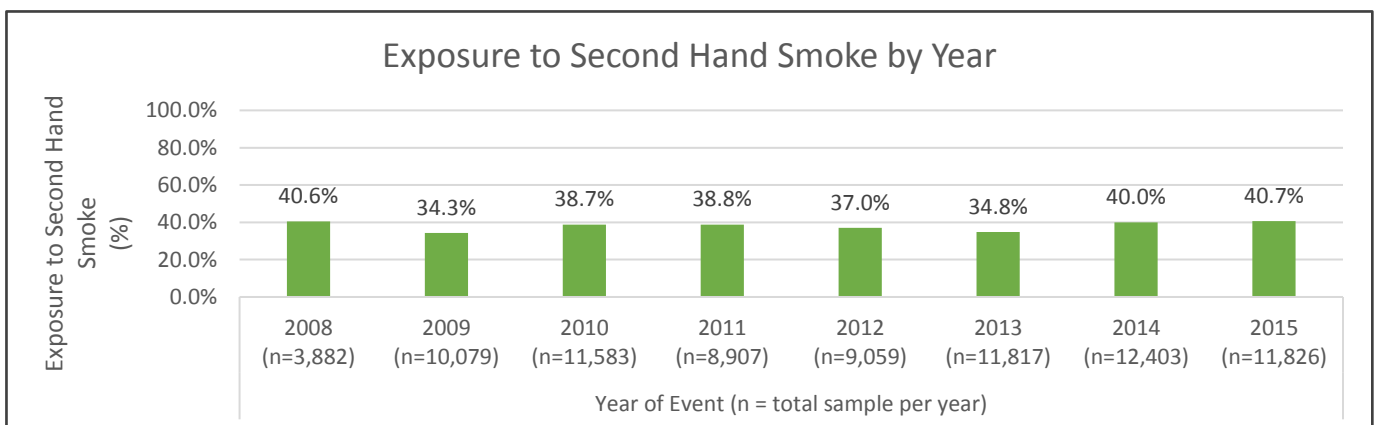
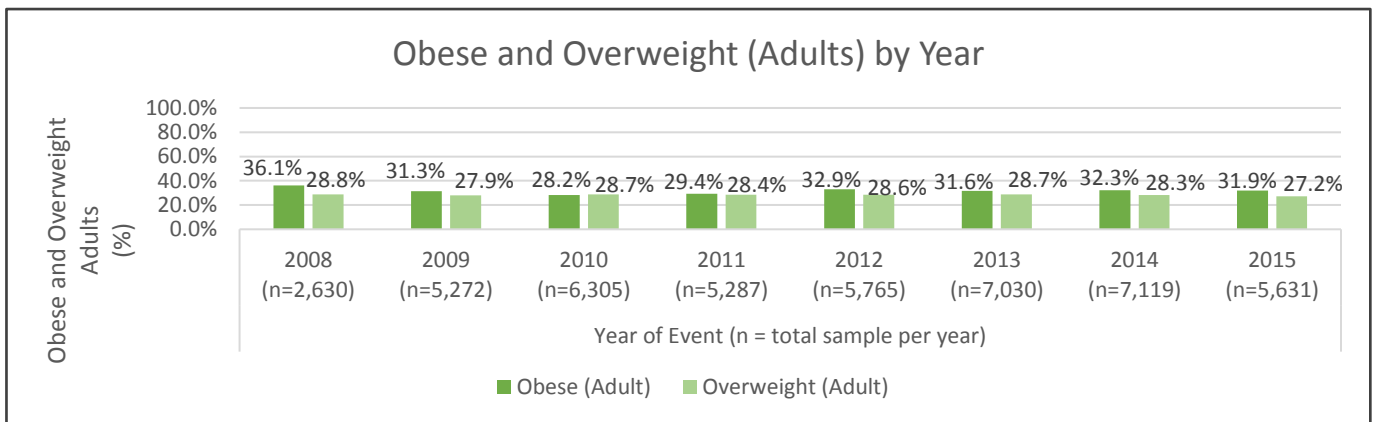
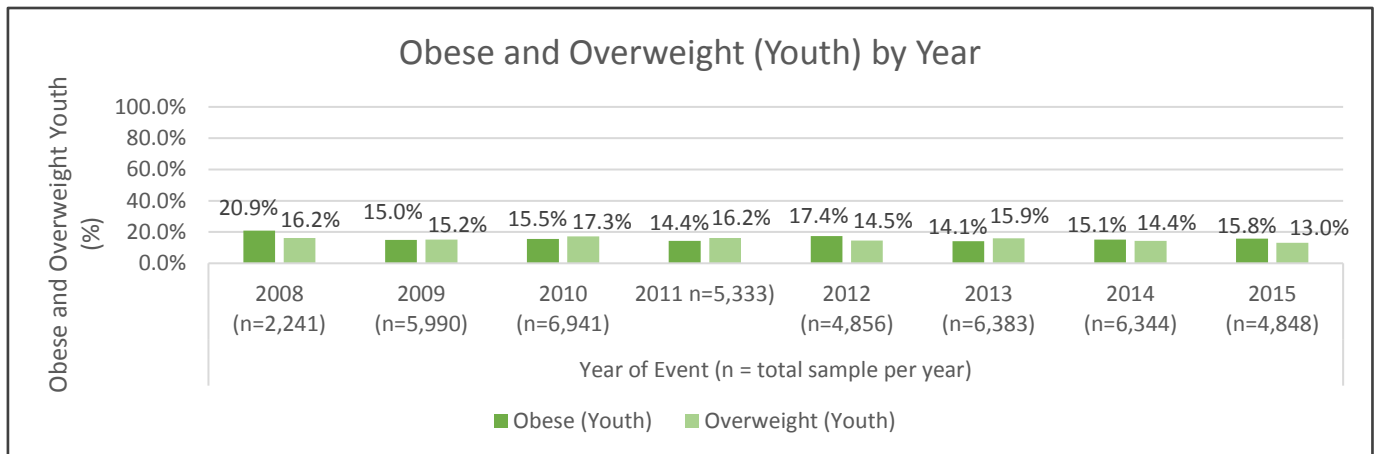
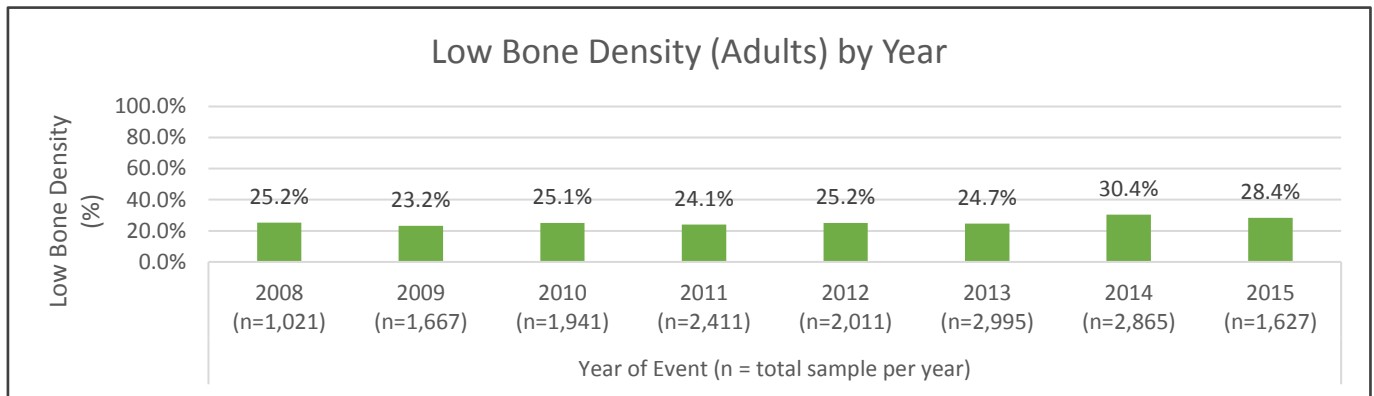
## Appendix V: Health Indicators by Discipline by Year

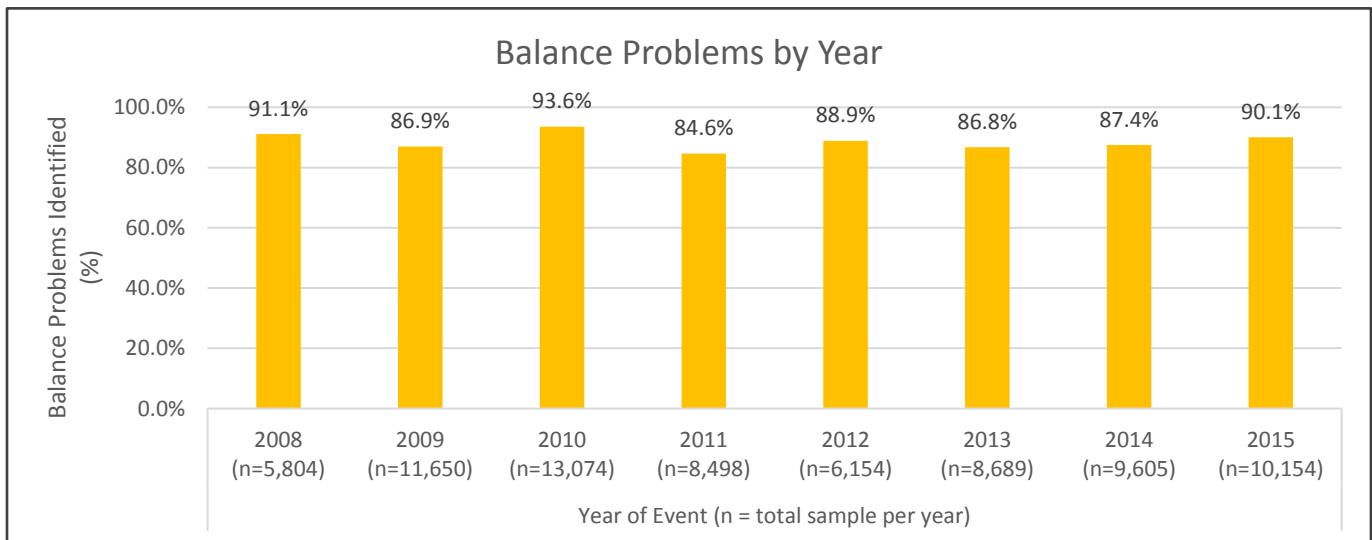
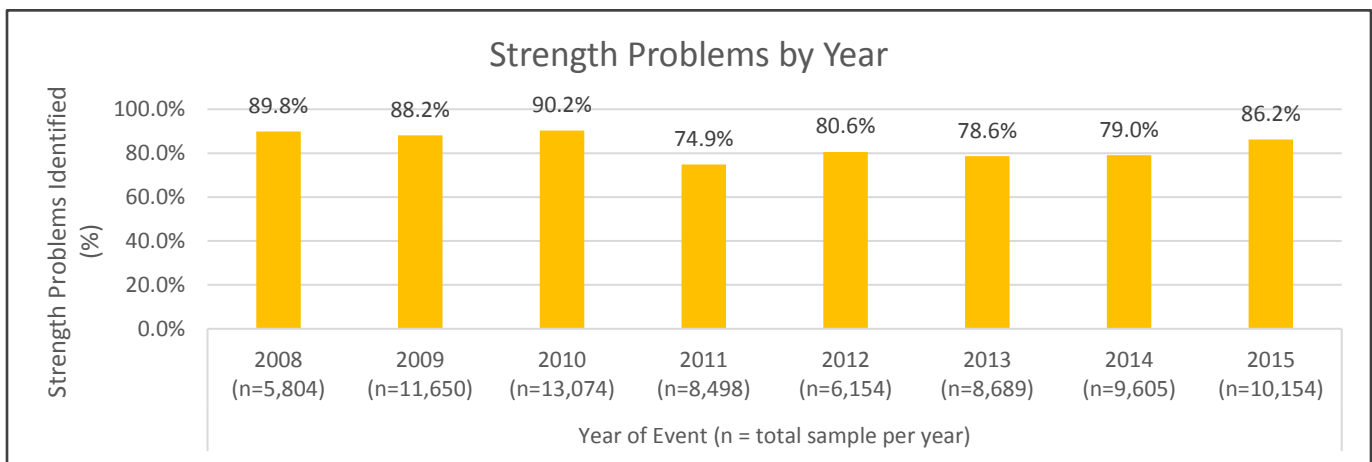
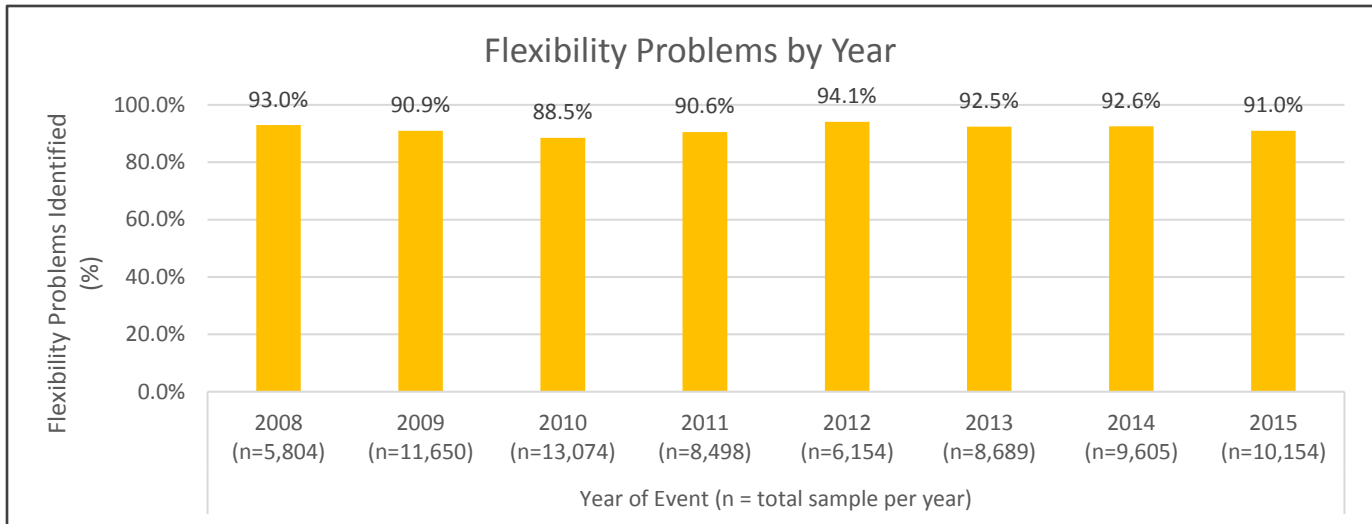
The graphs below present health indicator data for each discipline by year. When interpreting this data, it is important to note that HAS screening forms often change from year to year, so prevalence rates may not necessarily be comparable across years.

### Fit Feet

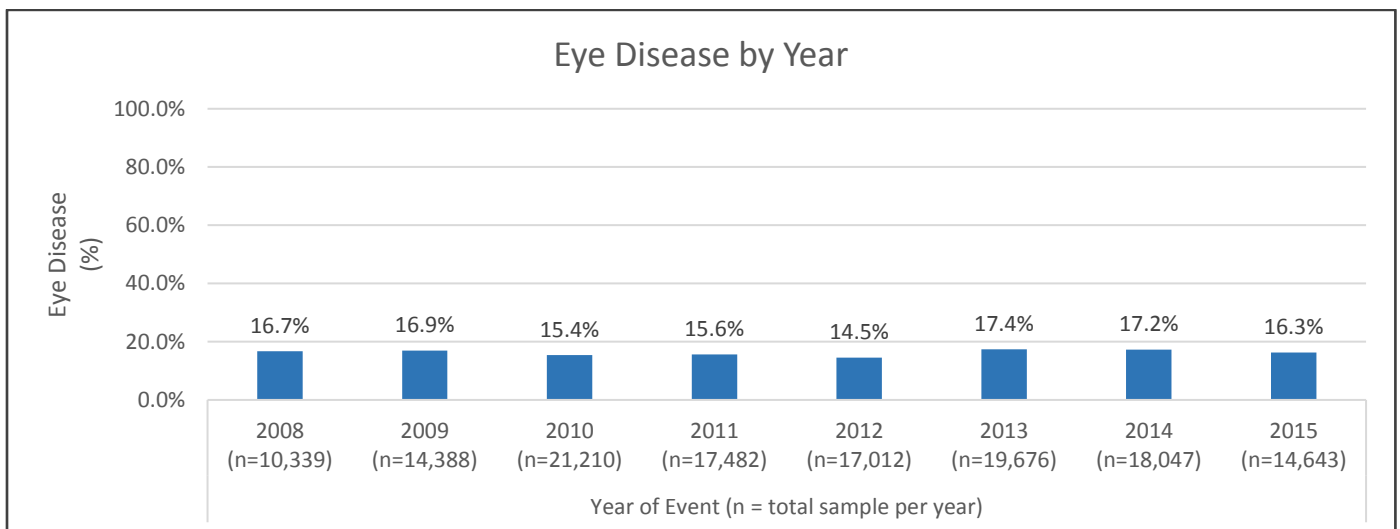
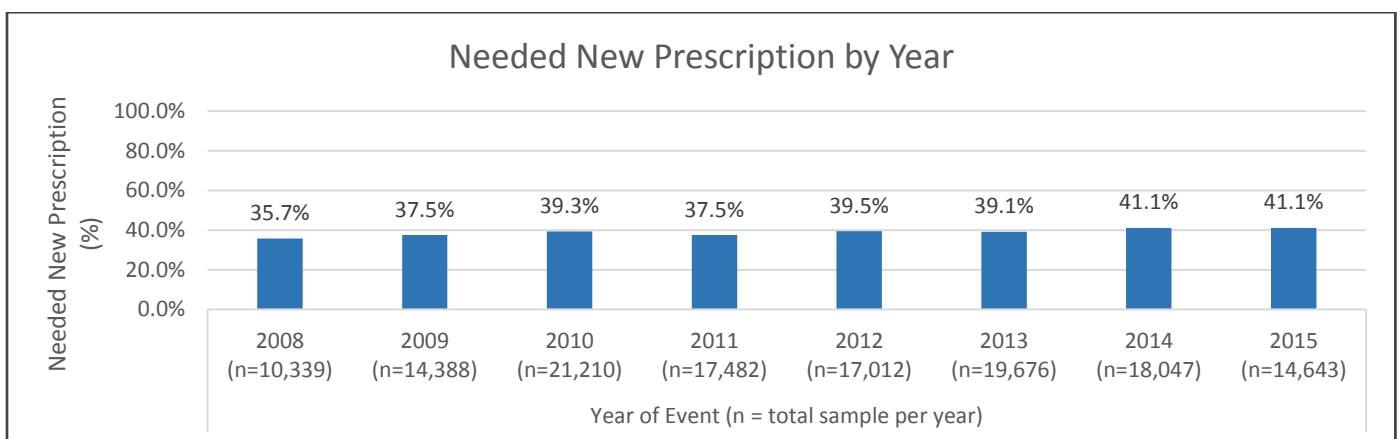
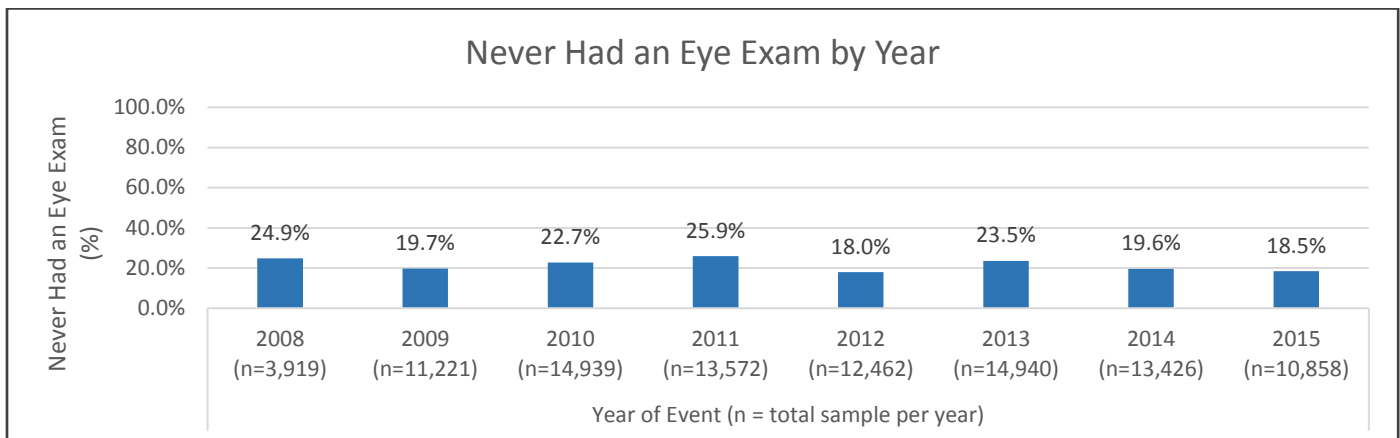


## Health Promotion

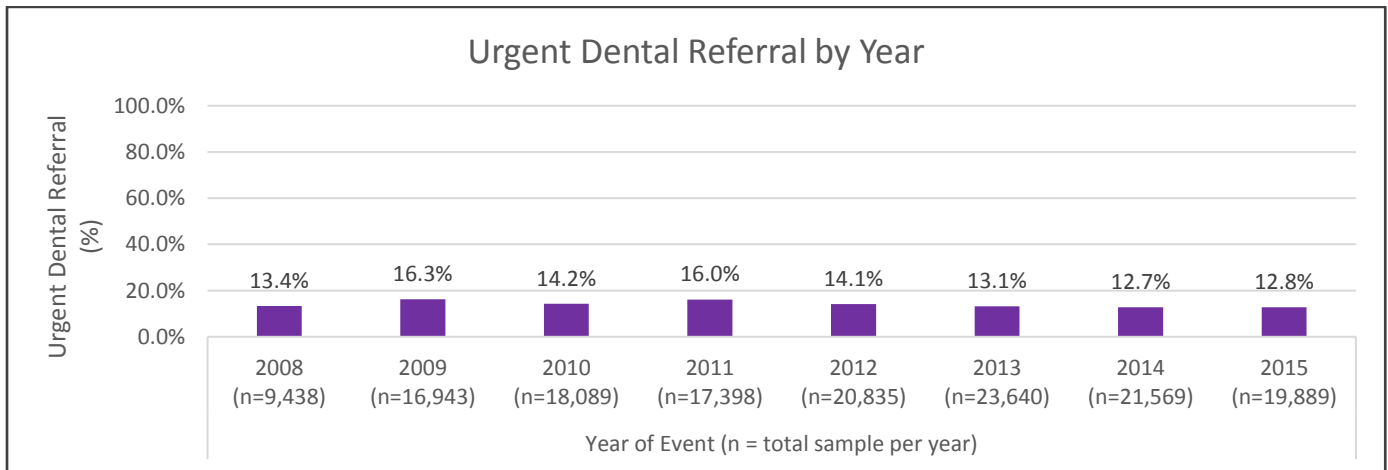
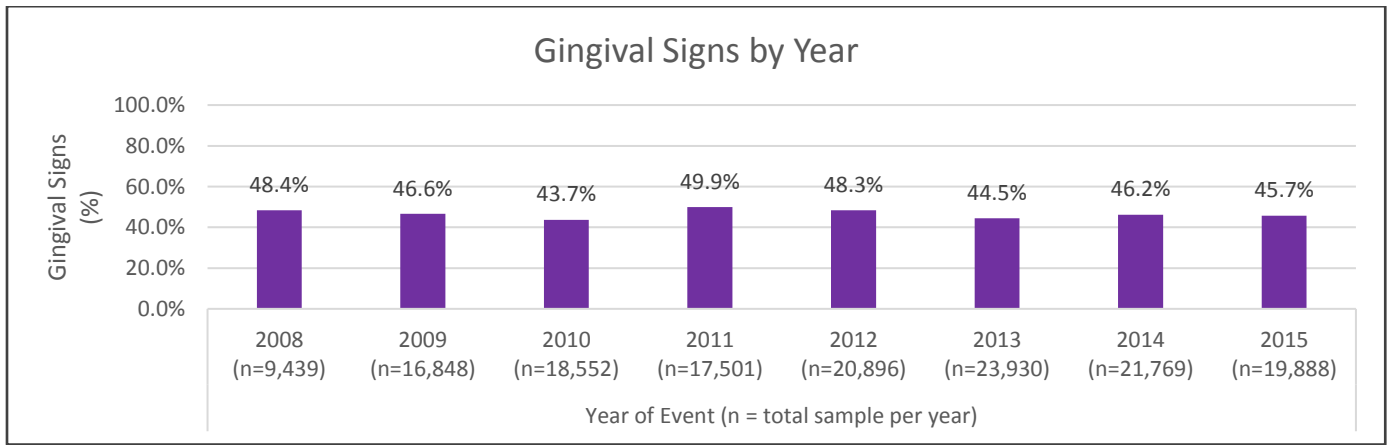
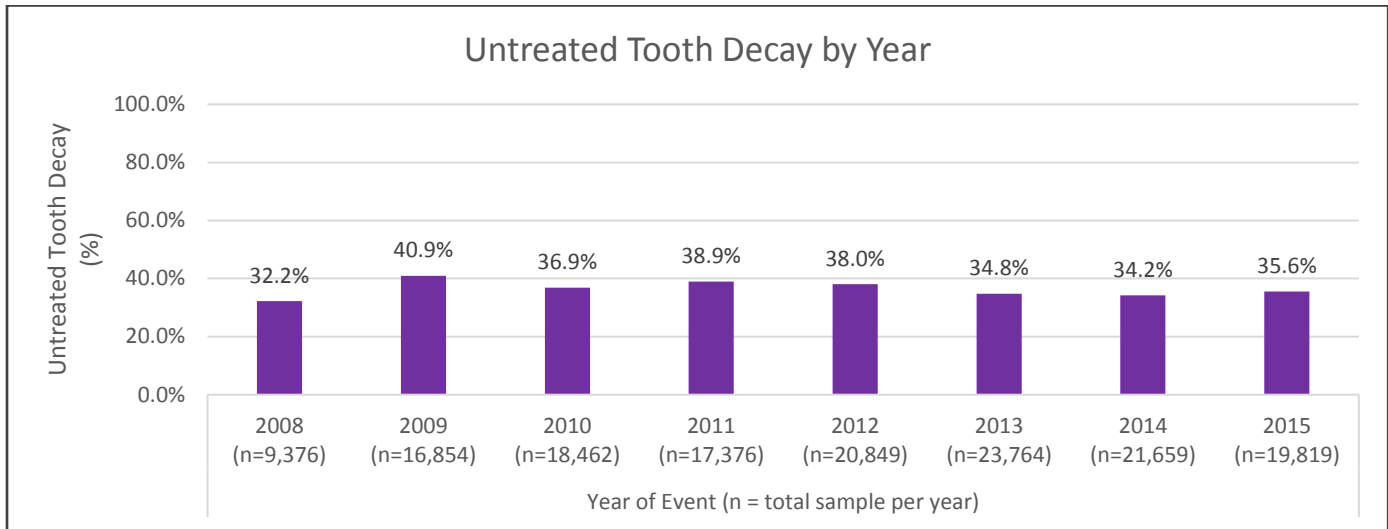




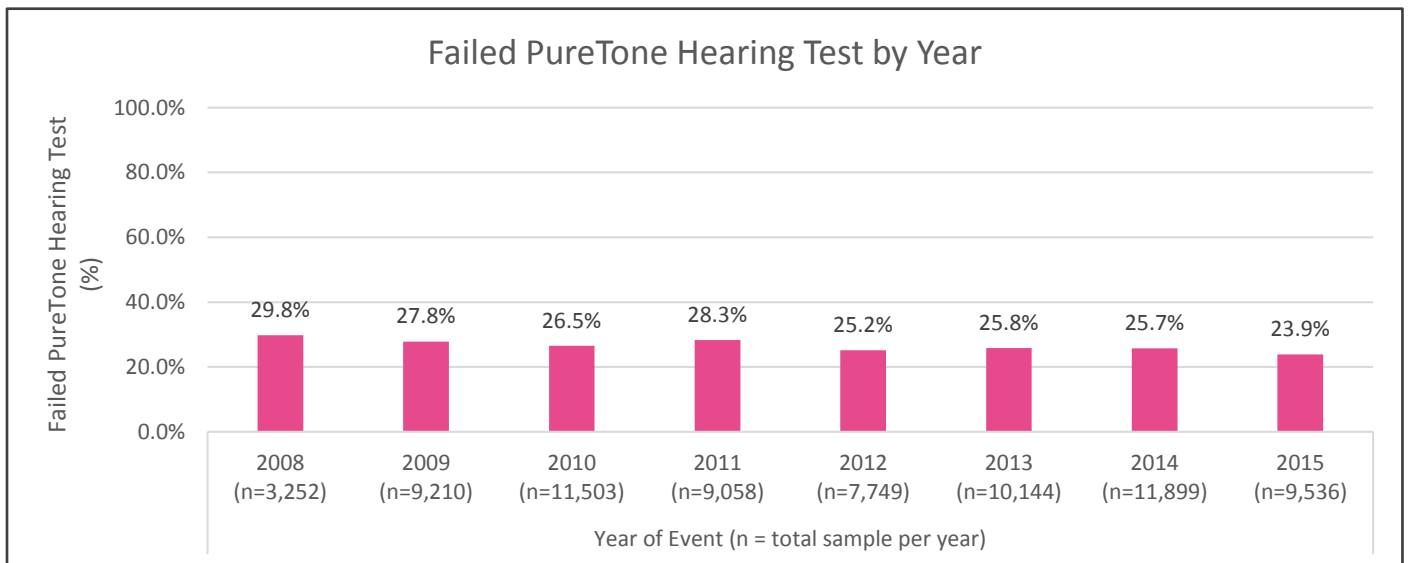
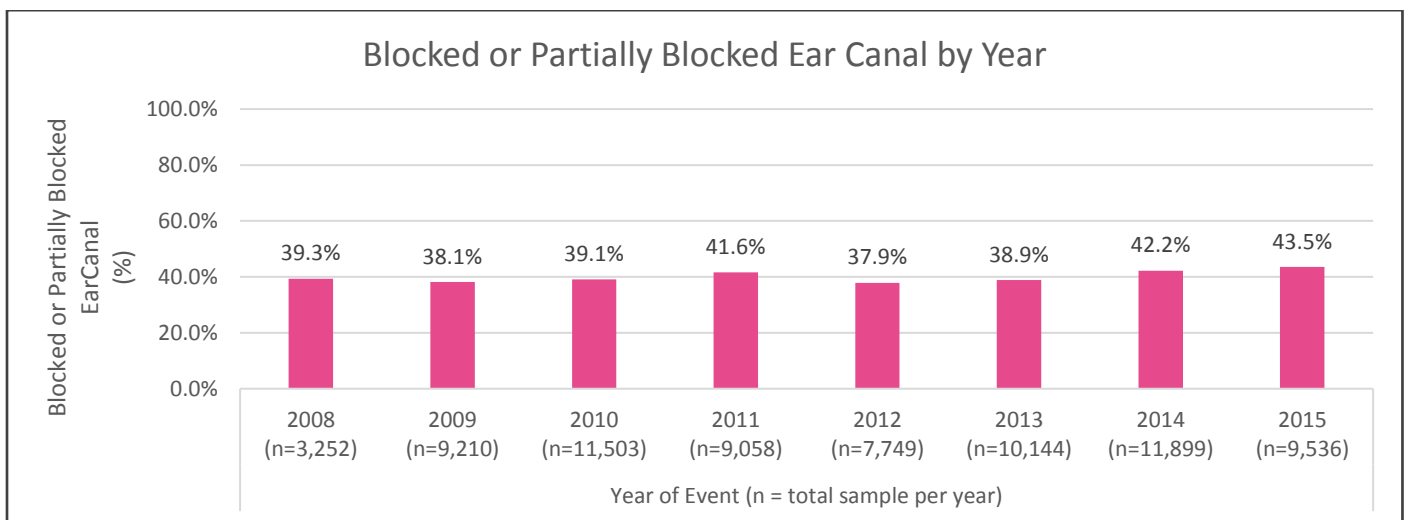
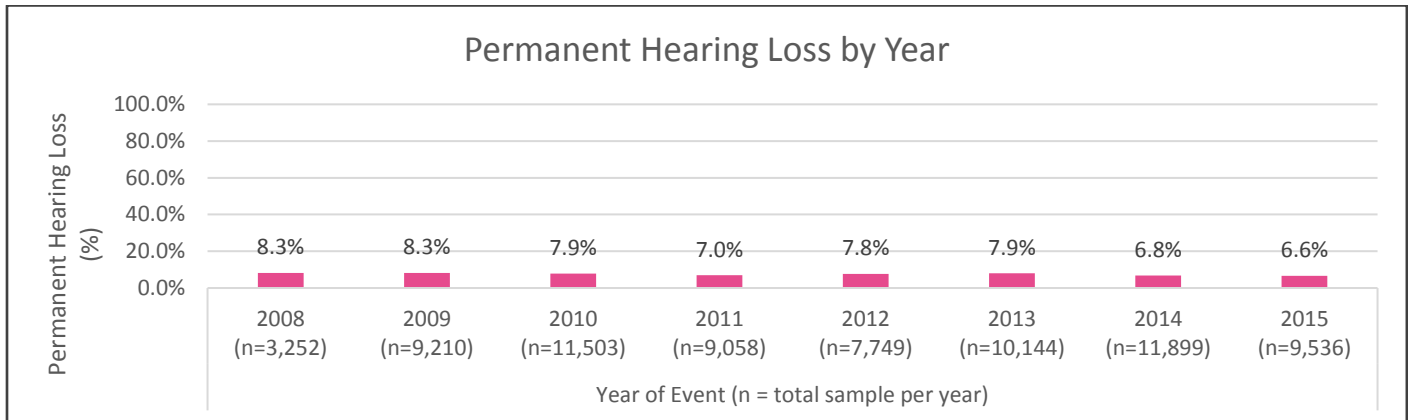
## Opening Eyes



## Special Smiles



## Healthy Hearing







## Appendix VI: Global/Regional Table

Healthy Athletes exam results 2007- September 2016 (data entered as of 9/15/2016)

	Global		Africa		Asia Pacific		East Asia		Europe Eurasia		Latin America		MENA		North America	
	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
Special Smiles Total	100.0	184571	100.0	16691	100.0	16992	100.0	12195	100.0	28784	100.0	18945	100.0	879	100.0	89953
Mouth Pain*	14.6	26228	22.9	3722	18.4	3017	9.3	1114	11.3	3189	25.5	4572	21.3	182	11.9	10411
Untreated Tooth Decay*	36.4	63618	38.3	6187	46.0	7375	38.0	4518	45.2	12240	63.7	11339	61.7	531	25.2	21376
Missing Teeth*	27.9	49216	16.4	2643	20.1	3239	15.0	1786	40.6	11174	27.2	4837	34.4	294	29.3	25199
Gingival Signs*	45.8	80408	33.9	5435	42.9	6853	36.1	4310	51.1	13983	50.2	8794	67.0	570	47.1	40417
Urgent Dental Referral*	13.8	24110	19.8	3048	17.9	2812	4.8	559	20.4	5563	22.7	3997	25.4	214	9.2	7901
Fit Feet Total	100.0	80803	100.0	2919	100.0	7629	100.0	6479	100.0	19073	100.0	7085	100.0	484	100.0	37092
Gait Abnormalities	50.1	40500	51.6	1506	40.1	3059	42.8	2770	50.6	9646	46.9	3326	33.3	161	54.0	20013
Bone Deformation	21.3	17176	15.3	446	13.0	989	10.9	707	24.8	4722	30.0	2122	17.4	84	21.8	8096
Skin/Nail Conditions	53.0	39307	54.9	1478	46.8	3110	44.0	2748	64.5	11896	62.5	4273	61.9	270	47.3	15520
Opening Eyes Total	100.0	155222	100.0	14001	100.0	16682	100.0	10840	100.0	24069	100.0	14427	100.0	1322	100.0	73750
Never Had an Eye Exam*	22.5	24681	75.3	6723	51.5	5970	28.0	1945	16.2	2992	45.6	4159	36.9	327	4.7	2537
Eye Disease	16.1	24990	17.4	2434	15.3	2559	12.2	1318	17.2	4144	16.6	2395	14.1	186	16.2	11944
Needed new Rx	38.4	59618	15.7	2197	24.5	4082	21.9	2371	36.4	8752	41.8	6035	24.0	317	48.6	35842
Healthy Hearing Total	100.0	84894	100.0	5090	100.0	7244	100.0	5712	100.0	20456	100.0	2059	100.0	937	100.0	43256
Permanent Hearing Loss	7.4	6319	4.2	213	8.4	608	5.9	338	7.6	1553	4.4	91	10.1	95	7.9	3406
Blocked or Partially Blocked Ear Canal	40.3	34182	40.7	2073	35.8	2592	41.2	2354	39.2	8009	35.2	725	40.7	381	41.6	17994
Failed PureTone Hearing Test	26.3	22306	25.9	1318	28.2	2041	18.5	1056	25.2	5159	17.6	362	30.5	286	27.8	12043
Health Promotion Total	100.0	113322	100.0	12093	100.0	6595	100.0	9537	100.0	21094	100.0	20247	100.0	1451	100.0	42701
Low Bone Density (adults)*	25.0	4654	8.7	9	29.3	414	26.7	208	25.2	831	12.6	67	18.6	86	25.2	3017
Obese (child)*	16.1	7840	7.5	602	9.1	320	12.7	797	12.1	926	14.3	1713	16.7	113	31.7	3352
Overweight (child)*	15.2	7418	8.3	665	10.0	351	14.4	904	13.3	1017	20.9	2498	17.9	121	17.5	1847
Underweight (child)*	10.1	4933	21.8	1752	24.4	856	10.8	675	7.0	536	4.5	534	5.2	35	5.1	534
Obese (adult)*	31.3	15655	9.1	160	16.6	408	11.7	338	23.9	2669	13.4	835	15.3	96	44.9	11124
Overweight (adult)*	28.2	14141	13.8	241	20.1	494	24.0	694	29.8	3333	34.9	2184	24.6	154	28.3	7021
Underweight (adult)*	5.0	2498	17.2	301	15.8	389	11.8	340	4.5	502	4.5	280	6.9	43	2.5	629
Use Tobacco Products*	6.4	6270	3.1	323	5.1	286	5.9	481	14.8	2955	2.2	421	4.3	59	5.1	1730
Exposure to Second Hand Smoke*	38.2	35013	31.6	3249	32.0	1648	50.6	3819	53.8	9898	26.0	4860	36.9	500	36.3	10955
Fun Fitness Total	100.0	85992	100.0	2587	100.0	5484	100.0	7234	100.0	20087	100.0	10688	100.0	867	100.0	38902
Flexibility Problems Identified*	91.3	78546	83.2	2153	81.6	4475	75.7	5478	91.0	18283	95.3	10186	87.3	757	95.3	37083
Strength Problems Identified*	83.2	71574	92.0	2380	86.0	4716	82.7	5979	75.4	15136	95.5	10205	79.5	689	83.2	32365
Balance Problems Identified*	89.3	76800	93.7	2423	88.3	4843	87.3	6318	83.8	16832	87.4	9336	89.3	774	93.0	36163
Exercise Frequency																
3 or More Days Most Weeks	53.5	39812	44.1	759	32.9	1542	61.9	3684	41.4	7736	41.1	4064	65.6	238	65.8	21725
Less Than 3 Days Most Weeks	38.4	28572	42.5	732	24.6	1152	31.2	1859	52.4	9777	51.8	5122	31.1	113	29.6	9772
No Regular Exercise Program	8.1	6059	13.4	231	42.6	1995	6.9	408	6.2	1162	7.0	694	3.3	12	4.6	1531

n = number with each health condition

\*Percentages based on number of athletes who completed particular test or answered particular question



Special Olympics  
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