

Type 2 Diabetes Study

Focus on Amputation Prevention

American Podiatric Medical Association



Type 2 Diabetes

- More than 24 million people in the United States have diabetes. Type 2 diabetes is the most common form of diabetes. Type 2 diabetes results when your body fails to properly use insulin.
- According to the American Diabetes Association, African-Americans and Hispanics are twice as likely to be diagnosed with type 2 diabetes as Caucasians.
- There are several risk factors for type 2 diabetes such as being overweight or obese, physical inactivity, ethnicity, high blood pressure, high cholesterol, gestational diabetes, and family history. Type 2 diabetes is usually diagnosed in adults 40 years and older, but is increasingly found in young people due to inactivity and obesity.
- People with diabetes are more likely to develop foot complications which, if left untreated, can lead to amputations.

Purpose of Study

- APMA (American Podiatric Medical Association) surveyed 600 people, including those with diabetes and those at risk for the disease, to determine their attitudes and behaviors related to foot care. APMA continues to encourage people with diabetes to receive preventative foot care from specialists. They also educate the public to recognize early signs of diabetic foot complications in an effort to reduce the occurrence of lower limb amputations.

Demographics

- There were 600 study respondents. The study sample was representative of the ADA's reported prevalence of type 2 diabetes in the U.S. population.
- Seventy five percent of respondents have been diagnosed with type 2 diabetes, while 25% have a family member with the disease. They are considered at risk due to a family history for type 2 diabetes.

Demographics

Variable	Category	Percent
Gender	Male	49%
	Female	51%
Age	35-44 years old	8%
	45-54 years old	19%
	55-64 years old	35%
	65+ years old	36%
Income	Less than \$25K	26%
	\$25 - 50K	21%
	\$50 – 75K	21%
	\$75 – 100K	6%
	More than \$100K	5%
	Refused	25%
Health Insurance	Yes	89%

Topics of Research

- Podiatric Medical Care
- Prevention and Active Care
- Treatment for Foot Complications
- Barriers to Foot Health Care
- Non-Traumatic Lower Limb Amputations
- Diabetes Health Awareness
- Diabetes Testing
- Discussing Diabetes

Podiatric Medical Care

- Fifty-six percent of all respondents have seen a podiatrist.
- Sixty percent of people with diabetes have seen a podiatrist versus 39% of those at risk for diabetes.
- Fifty-five percent of respondents went to a podiatrist because their doctor recommended it compared to 42% of those who saw a podiatrist on their own.

Podiatric Medical Care

Reasons for Foot Care

Ailment	Percent
Ingrown toenails	21%
Regular check-up / care for diabetes	11%
Tingling in feet	8%
Sore on foot that won't heal	8%
Burning sensation in feet	8%
Heel pain	8%
Bunions	7%
Toenail cutting / upkeep	6%
Cramping in calves	5%
Arch pain	5%
Hammertoes	5%

Only responses totaling 5% or more listed.

Prevention and Active Care

Comprehensive foot care is vital to managing and treating diabetes complications. The physician should complete a thorough examination and always check the feet.

- Ninety-three percent of all respondents reported regularly seeing a doctor.
- Seventy-four percent of all respondents reported that their doctor regularly checks their feet. Seventy-eight percent of people with diabetes reported that their doctor regularly checks their feet as opposed to only 60% of those at risk for diabetes.

Prevention and Active Care

Reported Diabetic-type Foot Problems

Have you ever had ...	People w/ diabetes	People at risk for diabetes	All Respondents	If yes, seen podiatrist for it
Sore on foot that won't heal	18%	10%	16%	43%
Tingling in feet	66%	44%	61%	23%
Burning sensation in feet	57%	38%	51%	24%
Cramping in calves	60%	66%	62%	13%

Prevention and Active Care

Reported Diabetic-type Foot Problems

- People with diabetes reported more symptoms that preceded infections in feet than those at risk for diabetes.
- Less than half of respondents reported that they had seen a podiatrist for these symptoms if they occurred. However, some respondents listed seeing a podiatrist for other reasons such as regular check-ups.

Treatment for Foot Complications for All Respondents

		Infection only	Amputation
Received preventative foot care	Yes	40%	65%
Time from onset of pain until podiatrist was seen	One month or less	31%	10%
Steps respondents could have taken to help prevent complications	Seen specialist sooner	9%	25%
	Paid attention to warning signs	25%	30%

Note: Sample sizes are small (amputation (N=17, infection only N=45) and results should be seen as tentative

Barriers to Foot Care

- Ninety-four percent of all respondents reported that no barriers would prevent them from seeing a podiatrist if problems in their feet occurred.
- Most common stated barriers included:
 - 32% - No insurance
 - 22% - Lack of money
 - 9% - The inconvenience of visiting a podiatrist
 - 9% - Insurance won't cover a podiatrist
 - 8% - Lack of transportation

Diabetes Health Awareness

- Ninety-eight percent of all respondents stated that they were aware that people with diabetes are at greater risk of foot and leg infections and amputations.

Lower Limb Amputations for All Respondents

Amputation is one of the most feared complications of diabetes. Every 30 seconds a lower limb is lost to diabetes. Furthermore, diabetes-related amputations noticeably worsens the quality of life and increases risk for future amputations.

- Sixty-five percent of respondents that had amputations received foot care.
- Only 10% of those respondents who had amputations saw a podiatrist within a month of onset for foot complications. Almost one third (31%) of those whose infections did not require amputations saw a podiatrist within a month of onset of pain.

Lower Limb Amputations for All Respondents

- The study indicates that as problems in feet became more severe, more foot care was sought. A higher percent of respondents whose infections required amputations said they were receiving foot care opposed to respondents with infections only.
- About 25% of those who had amputations stated that they should have seen a specialist sooner. About 30% said that they should have paid more attention to warning signs.

Diabetes Testing

Diabetes often goes undiagnosed because many symptoms seem harmless. The early detection of diabetes and treatment can decrease the chance of developing complications.

- Eighty-seven percent of at risk respondents have been tested for diabetes.
- The top reasons cited by those at risk who haven't been tested for diabetes include:
 - 31% - I don't need to / I don't have symptoms
 - 16% - My doctor doesn't think I need to / hasn't tested for it
 - 16% - I don't know why, I just haven't
 - 14% - I have had my blood sugar tested, it is normal

Discussing Diabetes

- Ninety-two percent of those surveyed with diabetes reported discussing the disease with their families.
- Reasons for not discussing diabetes included:
 - 29% - It's not necessary
 - 22% - Having no family or family lives far away
 - 19% - I don't know why
 - 14% - It's my business

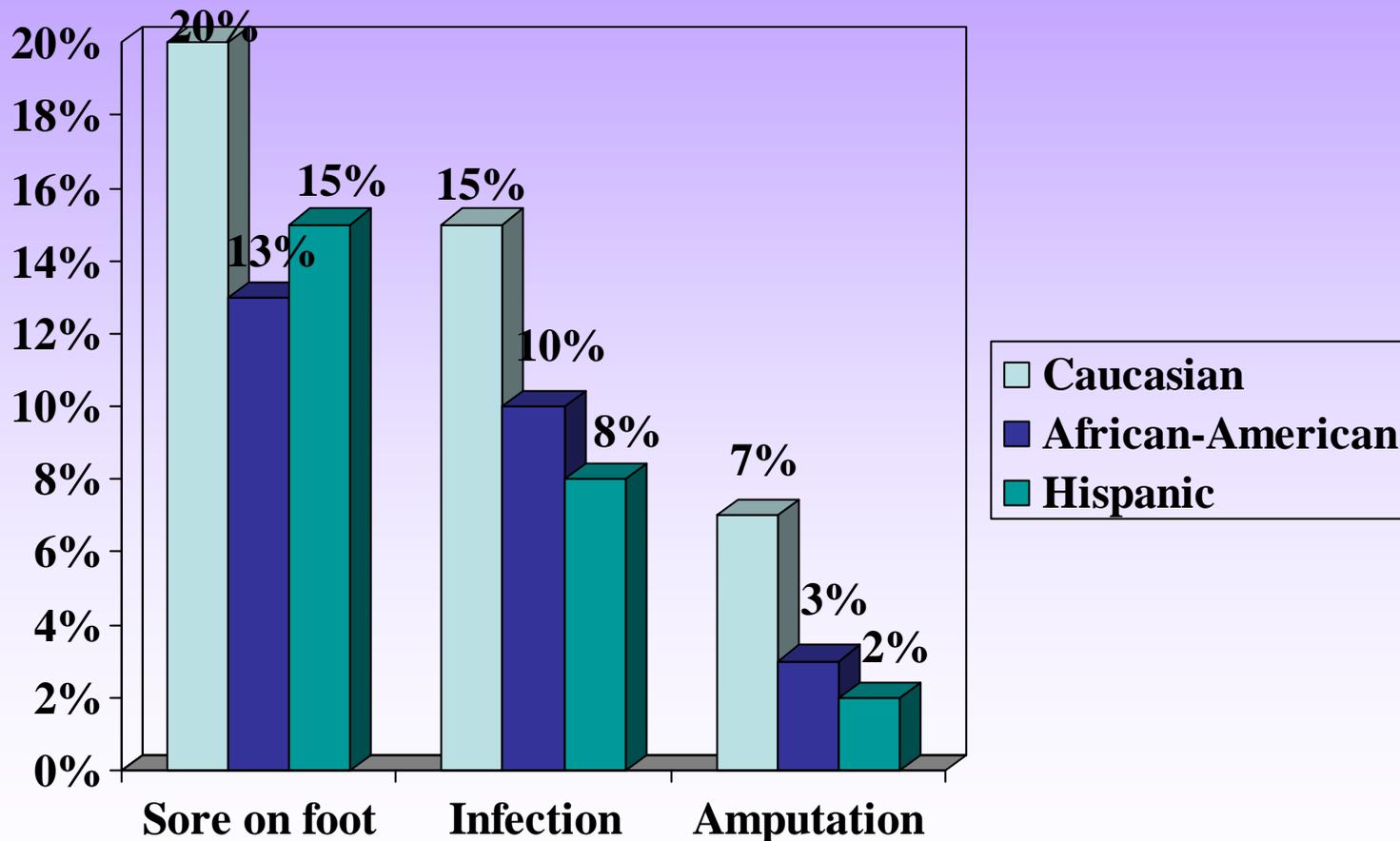
African-American Key Findings

	African-American	Caucasian	Hispanic
Seen podiatrist	60%	50%	56%
Doctor recommended podiatrist	56%	54%	53%
Tested for diabetes	93%	89%	80%

African-American Key Findings

- The increased risk of African-Americans for developing diabetes and foot complications seems to be recognized by African-American respondents and their medical professionals.
- African-Americans were slightly more likely to have seen a podiatrist, had their doctors recommend that they see a podiatrist, and be tested for diabetes (at risk sample) than the Caucasian and Hispanic respondents.

Caucasian Key Findings



Caucasian

Key Findings

- A higher percentage of Caucasian respondents reported sores on their feet that wouldn't heal, leg infections, and amputations than the African-American and Hispanic respondents.
- None of the African-American and Hispanic amputees listed incomes over \$50,000, while 33% of Caucasian amputees listed incomes over \$50,000.

Hispanic

Key Findings

	Hispanic	African-American	Caucasian
Tested for diabetes	80%	93%	89%
No insurance listed as barrier to foot care	50%	18%	34%
Discussed diabetes with family	96%	90%	91%

Hispanic

Key Findings

- Hispanics were less likely to be tested for diabetes if they were at risk, compared to the Caucasian and African-American respondents.
- More Hispanics listed no insurance as a barrier to receiving care if problems occurred in their feet.
- Hispanics were most likely to talk to their families about their diabetes.

Summary of Key Findings

- Eighty-seven percent of at risk respondents have been tested for diabetes.
- Over 90% of all respondents regularly see a doctor.
- Only 56% of all respondents have seen a podiatrist.
- Seventy-four percent of all respondents reported that their doctor regularly examines their feet.

Summary of Key Findings

- Only 10% of all respondents reported having feet or leg ailments that developed into infections.
- Ninety-eight percent of all respondents are aware that diabetics are at greater risk of foot and leg infections and amputations.
- Ninety-four percent of all respondents reported there were no barriers that would prevent them from seeking medical help if problems in their feet or legs occurred.
- Over 90% of people with diabetes discuss their illness with their family.

Conclusion

- Comprehensive preventive foot care is imperative in successfully managing and treating all foot and leg diabetic complications. About 25% of those who had amputations stated that they should have seen a specialist sooner, while 30% said that they should have paid more attention to warning signs.
- While more than 90% of all respondents routinely visit the doctor, 56% receive foot care from their podiatrist. Overall the respondents were aware of complications due to diabetes including foot and leg infections, and amputations.
- Type 2 diabetes is becoming more prevalent each day. It is imperative that one maintains a healthy lifestyle and actively manages their health. The majority of respondents reported engaging in good health care practices such as regularly being seen by a doctor, discussing diabetes with their families, and if at risk, getting tested regularly.
- Early diagnosis and treatment help to successfully manage type 2 diabetes. Although the highest prevalence rates are in minority groups, type 2 diabetes occurs in all race and ethnicities.

Conclusion

- This study found that Caucasians were diagnosed with more foot infections and received more lower limb amputations than minorities. The results of this study did not clearly define whether other co-morbidities such as heart disease, eye complications, neuropathy, and kidney disease increased the association between diabetes and lower limb amputation. Future studies should focus on identifying risky behaviors and other preexisting health conditions that could increase the probability of lower limb amputation.
- Socioeconomic status was a significant barrier for respondents who were not receiving proper health care due to a lack of income and insurance coverage for medical services for households making less than \$50,000 annually. Respondents who had amputations regretted not seeking medical treatment sooner than those suffering from infections only.