

2010

# Combating the Rise of Type 2 Diabetes in Africa

Taylor Briseno  
*Worcester Polytechnic Institute*

Megan Dempsey

Vivek Kumar

Sarah Sawatzki

Follow this and additional works at: <http://digitalcommons.wpi.edu/gps-posters>

---

## Recommended Citation

Briseno, Taylor; Dempsey, Megan; Kumar, Vivek; and Sawatzki, Sarah, "Combating the Rise of Type 2 Diabetes in Africa" (2010).  
*Great Problems Seminar Posters*. 52.  
<http://digitalcommons.wpi.edu/gps-posters/52>

This Text is brought to you for free and open access by the Great Problems Seminar at DigitalCommons@WPI. It has been accepted for inclusion in Great Problems Seminar Posters by an authorized administrator of DigitalCommons@WPI. For more information, please contact [akgold@wpi.edu](mailto:akgold@wpi.edu).

# Combating the Rise of Diabetes in Africa

Taylor Briseno (Biology), Megan Dempsey (BME), Bobby Kumar (BME), Sarah Sawatzki (RBE)  
Advisor: Professor Jill Rulfs (Biology), Professor Helen Vassallo (Business/Management)



**“Without a major breakthrough in preventing and treating diabetes, the number of cases in sub-Saharan Africa is projected to double, reaching 24 million by 2030.”**  
-International Diabetes Federation (IDF)

## Tanzania



- Population: 36 million
- Affected by diabetes: about 450,000
- Percentage undiagnosed: over 80%
- Diabetes-related deaths per year: 15,408
- Percent of diabetic adults living in towns: 6%
- Number of diabetologists in the country: 6
- Average income per person: \$256

## Type 2 Diabetes Overview

### How does it happen?

- Not enough insulin produced or insulin not recognized
- Sugar builds up in blood- cells can't function

### Causes

- Overweight/obesity
- Lack of physical activity
- Unhealthy lifestyle choices

### Symptoms

- Fatigue
- Thirst/frequent urination
- Unexplained weight loss

### Diagnosis

- A fasting blood glucose test
- An oral glucose tolerance test

### Treatments

- Diet and exercise/weight loss
- Medications (insulin if needed)



## Need

Our need is to improve the education and diagnosis of Type 2 diabetes to combat the projected rise in this disease in Tanzania, Africa.

## Approach

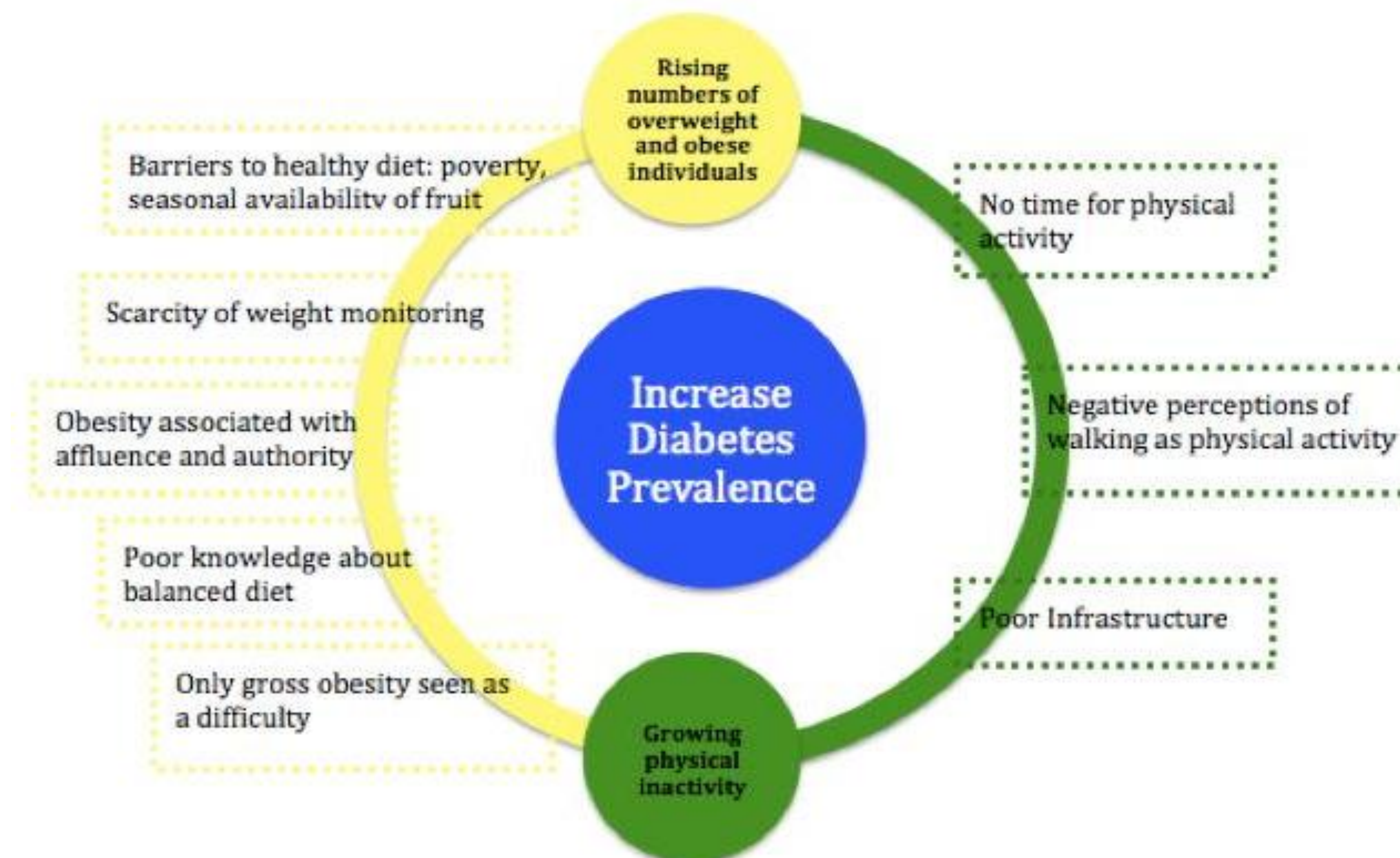
### Educate patients/doctors on:

- How to test and record your blood glucose
- What to eat and when
- How to take medications, if needed
- How to recognize/treat low and high blood sugar
- How to handle sick days
- Where to buy diabetes supplies and how to store them (if affordable)
- Role of family members/support system

### How:

- Utilize an educational pamphlet for doctors
- Utilize a separate, illiterate-friendly pamphlet for patients
- Distribute pamphlets in local clinics

## Reasons for Increase in Diabetes Prevalence



## Breaking Down Barriers

- Belief in health benefits/fear of consequences
- Empowerment/Self-confidence
- Locus of control
- Debunk myths about diabetes
- Address illiteracy issues



## Urbanization

- Experiencing fastest rate of urbanization worldwide
  - More people moving to urban areas
- Obesity as a sign of wealth
  - Increased consumption of high-fat and energy dense diets
  - High rates of obesity
  - Increased marketing from unhealthy restaurants
- Decrease in physical activity
  - Increased technology and transportation

## References

- A.D.A.M. "Type 2 Diabetes Overview." *Health News - The New York Times*. 20 May 2009. Web. 07 Dec. 2010. <http://health.nytimes.com/health/guides/disease/type-2-diabetes/overview.html>.
- AFRICA: Diabetes cases to double by 2030." *IRIN Africa English Service* (June 28, 2010): NA. *Academic OneFile*. Gale. Worcester Polytechnic Institute. 6 Dec. 2010 [http://find.galegroup.com/gtx/start.do?prodId=AONE&userGroupName=mlin\\_c\\_worpoly](http://find.galegroup.com/gtx/start.do?prodId=AONE&userGroupName=mlin_c_worpoly)
- Diabetes Car Ribbon Magnet*. Digital image. *Magnet Ribbons*. Web. 7 Dec. 2010. [http://www.thebargaincompany.com/208596\\_Diabetes\\_Car\\_Ribbon\\_Magnet.html](http://www.thebargaincompany.com/208596_Diabetes_Car_Ribbon_Magnet.html).
- "Diabetes Clinics in Tanzania." *WDF Home*. World Diabetes Foundation, 5 Feb. 2008. Web. 07 Dec. 2010. <http://www.worlddiabetesfoundation.org/composite-127.htm>.
- Glucose Meter for Measuring Blood Sugar*. Digital image. *Health Blog for You*. 30 Nov. 2010. Web. 7 Dec. 2010. <http://www.futureofcollaboration.com/2010/11/diabetes-type2-and-type1/>.
- Kolling, Marie, Kirsty Winkley, and Mette von Deden. "For someone who's rich, it's not a problem". Insights from Tanzania on diabetes health-seeking and medical pluralism among Dar es Salaam's urban poor." *Globalization and Health* 6 (2010): 8. *Academic OneFile*. Web. 7 Dec. 2010.
- Mbanya MD, Jean Claude, Ayesha Motala MD, Eugene Sobngwi MD, Felix Assah MD, and Sostanie Enoru MD. "Diabetes in Sub-Saharan Africa." *The Lancet Student*. 22 July 2010. Web. 22 Nov. 2010.
- Price, C., Shandu, D., Dedicat, M., and Gill, G. (2007). Diabetes education and empowerment: lessons from rural South Africa. *Practical Diabetes International*, 24: 217-221. doi: 10.1002/pdi.1101
- "Tanzania Map." *ilike2learn*. Web. 07 Dec. 2010. <http://www.ilike2learn.com/ilike2learn/Continent%20Maps/Country%20Maps/Tanzania.html>.