

# WOMEN AS THE FACE of AIDS



Third Annual Iris House Summit  
Nature vs. Nurture the  
Social Dynamics of AIDS  
June 12, 2008



# Vitamin D – Health Promotion & Disease Prevention

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*Shirley M. Alves, RD, CDN*  
*Director, Food and Nutrition Program*  
*Iris House*





# Vitamin D

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- National Institutes of Health (NIH) Conference on Vitamin D in 2007
- Exciting and relevant information for men and women served by Iris House
  - People of color
  - HIV+ and particularly those on protease inhibitors
  - Overweight/obese
  - Diabetic
  - Hypertensive
- What vitamin D is and does
- How it works in the body
- The **new** information about how it can reduce the risk factors for certain diseases
- The amount that is needed for optimal function and best sources
- How to ensure you're getting adequate amounts





# Vitamin D – NIH Conference

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- New issues were raised
  - Growing prevalence of vitamin D insufficiency/deficiency in the U.S. population
  - Inadequacy of vitamin D at blood levels previously viewed as adequate



# Vitamin D – What is it and where do we get it?

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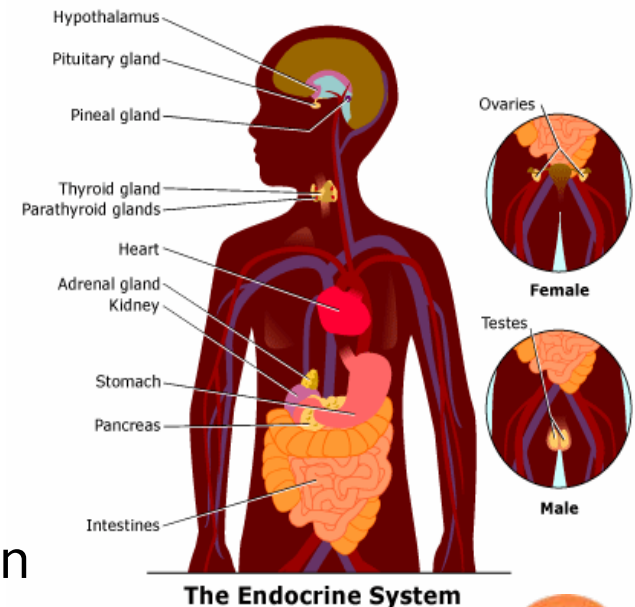
- A fat-soluble vitamin that helps body absorb calcium and phosphorous
- Made by our body
  - Sunlight (makes inactive form in skin)
  - Changed in liver and kidney to produce active D3
- Taken in with food
  - primarily fatty fish, fortified milk and cereal



# Vitamin D – What does it do?

## ■ In Endocrine System

- Regulates calcium absorption  
vital for nervous system
- Regulates phosphorus absorption - bone
- Maintains appropriate blood levels of  
calcium & phosphorus
- Works w/ other vitamins, minerals and  
hormones to promote bone mineralization  
- essential for bone hardness and rigidity



# Vitamin D - What does it do?

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- **In Autocrine System -**

- Controls cell replication
  - cells that divide too rapidly may lead to diseases like cancer
- Controls specialization of cells for specific functions
- Indirectly affects various aspects of the immune response



# Vitamin D – Important New Roles



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## ■ Immune System –

- has positive effects on immune system function
- may inhibit autoimmunity diseases

## ■ Insulin Resistance –

- has a positive effect on insulin resistance
- adequate amounts reduces risk of metabolic syndrome

Source: American Journal of Clinical Nutrition, Vol. 80, No. 6, 1717S-1720S,  
December 2004  
American Journal of Clinical Nutrition, Vol. 79, No. 5, 820-825, May 2004





# Vitamin D – Important New Roles

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- **Cancer**

- Adequate amounts may reduce risk for certain types of cancers

- **Blood Pressure regulation**

- Adequate amounts may decrease risk of high blood pressure.

Source: American Journal of Clinical Nutrition, Vol. 85, No. 6, 1586-1591, June 2007





# Risk Factors for Vitamin D Deficiency

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- Dark skin
- HIV/AIDS and/or Protease Inhibitors
- Obesity
- Aging
- Fat malabsorption syndromes
- Inflammatory bowel disease e.g. Crohn's Disease
- Covering all exposed skin or using sunscreen whenever outside



# Vitamin D- Deficiency and Effects in Endocrine System

## ■ In Adults:

- Osteomalacia – muscular weakness in addition to weak bones with bone pain
- Osteoporosis and osteopenia
- Muscle pain in adults and children



# Vitamin D – Deficiency and Effects in Endocrine System

- In infants or children:
  - Rickets results in bow legs or arms
  - “Soft spot” in infant skull has delayed closure
  - Rib cage may become deformed



# Vitamin D- Deficiency and Effects in Endocrine System

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- Impaired insulin sensitivity
- Impaired immune response
- Increased risk of autoimmune diseases
- Increased risk of various cancers:  
breast, colon, lung, prostate, bone marrow



# Old Recommendations for Vitamin D

- No RDA
- Recommended intakes:
  - Birth to 50 yrs      200 IU
  - 51 to 70 yrs        400 IU
  - 71+yrs                600 IU
- Resulting in lab values of vitamin D levels between 20 and 80 nmol/L or (8 and 32 ng/mL)



# New Recommendations for Vitamin D

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- Blood levels above 80nmol/L (32ng/mL) for normal absorptive regulation
- Amount of Vitamin D needed ~4000IU
- Recommended intakes:
  - Adults – at least 1000 IU daily
  - Upper limit - 10,000 IU daily



# Vitamin D Sources and Typical Amounts

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- Natural Foods
  - 50 IU
- Fortified Foods
  - 100 IU
- Supplements
  - 200 – 400 IU
- Sun exposure
  - 2000 IU
  
- Total
  - 2350 – 2550 IU
  
- Needed
  - ~ 4000 IU







# To Increase Vitamin D Levels

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- Ask MD to test for Vitamin D (25OHD) levels
- Sun exposure
  - Fair Skin – 5-10 minutes 3x week
  - Dark Skin - ?
- Eat fatty fish, fortified dairy and cereal products
- Vitamin **D3** supplements 1000-2000IU





# Additional References

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- Lappe, JM, et al. *Am J Clin Nutr* 2007; 85: 1586-1591
- Talward SA, et al *Am J Clin Nutr* 2007; 86: 1657-1662.
- Cozzolino,M, et al *AIDS* 2003;17:513-520





# Contact

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- Iris House, Inc.
- 2348 Adam Clayton Powell Jr. Blvd.
- New York, NY 10030
  
- Tel 646.548.0100 ext 210
- Fax 646.548.0276
  
- [salves@irishouse.org](mailto:salves@irishouse.org)
- [www.irishouse.org](http://www.irishouse.org)



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**Iris House, Inc**

**The Food and Nutrition Department**

The Healthy Living Nutrition Program

Shanon Morris

Katherine Sheehan R.D.

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# Contents

- Food and Nutrition Program
- Healthy Living Program
  - Purpose and Goals
  - Components and Participants
  - Expected Outcomes
  - Challenges and Next Steps





# Food and Nutrition Program

The ultimate goal of our program is to optimize health and prevent chronic diseases by helping to ensure that good nutrition is an established part of HIV management.





# Food and Nutrition Program

- Serves approximately 200 active clients
- Monthly 1:1 nutritional counseling
- Healthy pantry bags given twice a month
- Daily cooking classes
- Lunch served daily
- Weekly exercise class
- **Healthy Living Program**







# Healthy Living Program

## NECESSITY

- High prevalence of obesity and diabetes in Harlem (DOHMH, 2004) and among individuals with HIV.
  - Increased metabolic and nutritional complications associated with HAART. (Wanke et al., 2002)
  - Low-income women with HIV have higher rates of depression and stress, which can act as barriers to lifestyle change. (Ickovics et al., 2001)
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# Healthy Living Program

## PURPOSE

To provide nutrition counseling and education to clients who have co-morbidities such as:

- Obesity - BMI  $>30$
  - Diabetes
  - Hypertension
  - Altered lipid panel
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# Healthy Living Program

## GOAL

To reduce body weight by 5-10% or prevent additional weight gain, therefore improving the management of co-morbidities associated with obesity.





# Healthy Living Program

## COMPONENTS

- Nutrition education and support group offered twice monthly.
  - Each month a new chapter in the Healthy Living Workbook is discussed.
  - A healthy snack is served.
  - Healthy pantry bag provided monthly.





# Healthy Living Program

## COMPONENTS

- Monthly nutritional counseling.
    - Up to date lab work must be provided every 6 months.
  - Onsite weekly exercise classes.
    - 1 hour session with a personal trainer.
  - Certificate of Completion and a \$50 food voucher if 10 of 12 monthly classes are attended.
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# Healthy Living Program

## PARTICIPANTS

30 participants currently enrolled

- 28 women, 2 men
- 24 African American, 8 Hispanic
- Majority have a BMI >30
- 6 are Diabetic





# Healthy Living Program

## Anthropometric Data:

- Weight
- BMI
- Bioelectrical Impedance Analysis
- Waist circumference
- Blood pressure

## Laboratory Values:

- Total cholesterol
  - HDL
  - LDL
  - Hgb A1c
  - Vitamin D
  - CD4 Count
  - Viral load
-



# Healthy Living Program

## TRACKING DATA

- Data to be collected at 4 points in time:
    - Intake
    - 90 days
    - 180 days
    - 12 months
  - Database developed to track clients in Healthy Living Program.
-





# Healthy Living Program

## EXPECTED OUTCOMES

- Improvement in anthropometric data.
    - Weight maintenance or achievement of 5-10% weight loss.
    - Decrease in BMI.  
(Goal: 18.5 – 24.9)
    - Decrease in body fat percentage.  
(Goal: <31% for women, <24% for men)
    - Decrease in waist circumference.  
(Goal: <35 in. for women, <40 in. for men)
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# Healthy Living Program

## EXPECTED OUTCOMES

Improvement in laboratory data:

- Decrease in total cholesterol (Goal: <200)
  - Decrease in LDL cholesterol (Goal: <100)
  - Increase in HDL cholesterol (Goal: >60mg/dL)
  - Decrease in Hgb A1c (Goal 5.0 - 7.0)
  - Vitamin D status within normal range  
(Goal: 80nmol/L, 32ng/ml)
  - Decrease in blood pressure medication for those with hypertension.
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# Healthy Living Program

## EXPECTED OUTCOMES CONTINUED

- Increased feeling of support.
  - Improved knowledge of basic nutrition and weight loss principles.
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# Healthy Living Program

## CHALLENGES

- Limited resources
  - Participant attendance
  - Cultural and lifestyle barriers
  - Difficult to measure:
    - Nutrition knowledge (pre/post test)
    - Improvement in diet (food recalls)
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# Healthy Living Program

## MOVING FORWARD

- Continued improvement in holistic approach to counseling.
- Targeting children and partners to improve household eating behavior.
- Plan to developing education program specifically for diabetic clients .





# References

- Ickovics, J.R., Hamburger, M.E., Vlahov, D., Schoenbaum, E.E., Schuman, P., & Boland, R.J., et al. (2001). Mortality, CD4 Cell Count Decline, and Depressive Symptoms Among HIV-Seropositive Women: Longitudinal Analysis From the HIV Epidemiology Research Study. *Journal of the American Medical Association*, 285 (11), 1466-1474.
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# Contact Information

Iris House, Inc.

2348 Adam Clayton Powell Jr. Blvd.

New York, NY 10030



Tel 646.548.0100

Fax 646.548.0276



[smorris@irishouse.org](mailto:smorris@irishouse.org)

[ksheehan@irishouse.org](mailto:ksheehan@irishouse.org)

[www.irishouse.org](http://www.irishouse.org)

