

G6

**Vitamin D and
the
Breastfeeding
Baby**

Vitamin D and Breastfeeding

Goal: To understand the importance of Vitamin D, according to newest research

Objectives:

By the end of the presentation, the participant will be able to:

1. Define "Vitamin D"
2. List sources of vitamin D for humans
3. List affects of Vitamin D in various organ systems
4. List ways vitamin D deficiency may contribute to various disease processes
5. Discuss current recommendations for vitamin D in both breastfeeding mothers and babies

Outline:

Vitamin D and Breastfeeding

- I. Definition
- II. Overview of biochemistry
- III. Overview of physiology
- IV. Recommendations for intake
 - A. Lactating women
 - B. Breastfeeding babies

Bibliography:

Holick, MF. Vitamin D Deficiency. *N Engl J Med.* 2007; 357(3):266-81.

Wagner, CL, Greer, FR, and the Section on Breastfeeding and Committee on Nutrition. Prevention of rickets and vitamin D deficiency in infants, children and adolescents. *Pediatrics* 2008; 122:1142-1152.

Will, H, Taylor, SN, and Wagner, CL. Vitamin D requirements during infancy: reading between the lines. *Breastfeeding Abstracts* 2009; 1:1-6.

Slide 1

**What's the Big Deal
about Vitamin D?**

Rebecca B. Saenz, MD, IBCLC, FABM
Mississippi Breastfeeding Medicine Clinic, PLLC
Madison, Mississippi

Slide 2

What is Vitamin D?

- Actually, a hormone
- Receptors in many organ systems –
 - Bone, skeletal muscle, brain, prostate, breast, colon, pancreas, immune cells
- Vitamin D2 = calciferol – about 30% activity of D3
- Vitamin D3 = cholecalciferol

Slide 3

Vitamin D synthesis

- Vit D from skin or diet >
- Metab in liver to 25-OH-Vit D >
- Metab in kidneys to 1,25-diOH-Vitamin D3
- Regulated by parathyroid hormone and serum calcium and phosphorus
- Excess 25-OH-Vit D and 1,25-diOH-Vit D are catabolized into inactive calcitric acid and excreted in bile

Slide 22

**Recommendations –
Breastfeeding Babies**

- Vitamin D2 suppl is approx 30% as effective as vit D3 suppl – calculate accordingly!
- AAP: 400 IU vitamin D3 / day
- Sensible sun exposure
- 1000-2000 IU vitamin D3 / day is safe, if necessary to treat deficiency

Slide 23

Summary

- Vitamin D deficiency is much more widespread than previously thought
- Vitamin D deficiency is a factor in many diseases, not only rickets and osteoporosis.
- Modern life is deficient in sunshine, and thus in vitamin D.
- Some form of vitamin D supplementation may be appropriate for many breastfeeding mothers / babies.

ATTACHMENT A (9/09)

Biographical Data Form

Biographical Data Form (2009 Criteria)

Instructions: If you are a planner for this activity, complete Sections 1, 2, 4, 5 & 8. If you are a speaker/ content expert for this activity, complete Sections 1, 3, 4, 5, 6, 7 & 8. Return this form to the nurse planner by the date specified. If there is a perceived conflict, the nurse planner will discuss with you how the conflict will be resolved before your continued participation in this learning activity.

Section 1: (Planner and/or Speaker) Demographic Data

Name, Degrees & Credentials: **Rebecca Buchanan Saenz, MD, IBCLC, FABM**

Date: January 7, 2010

If RN, nursing degree(s):

- AD
 Diploma
 BSN
 Masters
 Doctorate

Home Address **OR** Business Address:

Mississippi Breastfeeding Medicine Clinic, PLLC
111-A Depot Drive, Suite A, Madison, MS 39110
P. O. Box 1538, Madison, MS 39130-1538

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Present Position (Title) & Employer:

Founding Physician, Mississippi Breastfeeding Medicine Clinic, PLLC
Clinical Associate Professor, Department of Family Medicine
University of Mississippi Medical Center, Jackson, MS

Section 2: (Planner Information): Describe your familiarity/expertise with the following:

I am knowledgeable about the nursing CNE process through: (Describe):

Section 3: (Speaker Information): Faculty/Content Expert Information: Describe your expertise in this topic:

I represent the target audience by: (Describe):

Founding Physician, Mississippi Breastfeeding Medicine Clinic, PLLC
Board Certified Lactation Consultant
La Leche League Leader

I have content expertise in this topic by: (Describe):

1981-1984	BS, magna cum laude (Biology & Chemistry)	Belhaven University (formerly called Belhaven College) Jackson, Mississippi
1985-1990	M.D.	University of Mississippi Medical Center School of Medicine Jackson, Mississippi
1990-1991	Internship- Family Medicine	University of Mississippi Medical Center Department of Family Medicine Jackson, Mississippi
1991-1993	Residency- Family Medicine	University of Tennessee Health Sciences Center Department of Family Medicine at St. Francis Hospital Memphis, Tennessee
1999	Fellowship- Faculty Development/ Program Director Training	National Institute of Program Director Development American Academy of Family Practice and Association of Family Practice Residency Directors Kansas City, Missouri

Honors:

1997	Certificate of Appreciation from Mississippi State Department of Health, Jackson, MS, "In recognition of opening the first medical 'Breast-feeding Consulting Service' in the State of Mississippi and for your efforts to include lactation management in the educational curriculum"
1999	Family Physician representative from Mississippi invited to attend Breastfeeding Coordinators Training Conference, sponsored by American Academy of Pediatrics, Oak Brook, IL.
2003	Mississippi Breastfeeding Coalition established annual "Dr. Rebecca Saenz Scholarship" to the Breastfeeding: The Gold Standard conference

- 2004 Special Recognition Award given to Mississippi Breastfeeding Medicine Clinic, PLLC by Mississippi Breastfeeding Coalition “for support of breastfeeding mothers and babies”
- 2005 Recipient of Breastfeeding: The Gold Standard Award of Excellence
- 2007 Inductee into the Lactation Consultant Hall of Excellence
- 2009 Named one of the Best Doctors in America

Specialty Certification:

- 1993-present Diplomate, American Board of Family Practice
 - Recertification 1999-2006 by examination
 - Recertification 2006-2013 by examination
- 1999-present Certification, International Board of Lactation Consultant Examiners
 - Recertification 2004-2009 by continuing education recognition points
 - Recertification 2009-2014 by exam
- 2002 Named to inaugural class of Fellows of the Academy of Breastfeeding Medicine
- 2004 Accredited as La Leche League Leader

Professional Organizations:

- 1993-present American Academy of Family Physicians
- 1996-present Academy of Breastfeeding Medicine
- 1997-present Mississippi Breastfeeding Coalition
- 1997-present La Leche League International Medical Associates
- 1998-present International Lactation Consultants Association
- 2009-present Mississippi Perinatal Association (Vice President)

Current and Academic Appointments:

July 2003-to present Clinical Associate Professor, Department of Family Medicine
University of Mississippi Medical Center, Jackson, MS

July 2001-June 2003 Associate Professor, Department of Family Medicine
University of Mississippi Medical Center
Jackson, Mississippi

December 1994-July 2001 Assistant Professor, Department of Family Medicine
University of Mississippi Medical Center
Jackson, Mississippi

1997-2003 Director, Breastfeeding Consult Service
Department of Family Medicine
University of Mississippi Medical Center
Jackson, Mississippi

Previous Employment:

1994-2003 University of Mississippi Medical Center
Department of Family Medicine
Jackson, MS
Faculty Attending Physician

National Appointments:

1999-present Maternal Child Health Region IV Breastfeeding Promotion

Committee

2000-02; 2008 American Academy of Family Physicians Breastfeeding Advisory
Committee for AAFP Position Paper on Breastfeeding

Committee Appointments – Community

1998-present Mississippi Breastfeeding Coalition

1999-2003, 2006-7 “Breastfeeding: The Gold Standard” Conference Planning Committee

Publications:

Journal Articles

- Saenz, RB. "Hemolytic Disease of the Newborn Due to Anti-c: A case report." *Journal of the Tennessee Medical Association*, January 1993; 86(1): 9-11.
- Johnston, E and Saenz, RB. "Care of Adolescent Girls." *Primary Care: Clinics in Office Practice*, March 1997; 24(1): 53-65.
- Saenz, RB and Phillips, DM. "Breast Cancer." *Primary Care: Clinics in Office Practice*, June 1998; 25(2): 309-21.
- Saenz, RB. "Primary Care of Infants and Young Children with Down Syndrome." *American Family Physician*, January 1999; 59(2):381-93.
- Saenz, RB. "Treatment of Gastroenteritis in Breastfed Children." *American Family Physician*, April 1, 1999;59(7):1754-6.
- Saenz, RB, Beebe, DK, and Triplett, LC. "Infants with Congenital Heart Disease." *American Family Physician*, April 1, 1999;59(7):1857-68.
- Saenz, RB. "Review of 'The Clinical Management of Breastfeeding for Health Professionals' video series." *Journal of Human Lactation* 1999;15(4):358.
- Saenz, RB. "Iodine-131 Elimination from Breast Milk: A case report." *Journal of Human Lactation* 2000;16(1):44-6.
- Saenz, RB. "Evaluation of Common Breast Problems in Family Practice." (Invited Editorial) *American Family Physician* 2000;61(6):2327-8.
- Saenz, RB. "Prevention of jaundice in breast-fed babies." *Postgraduate Medicine* 2000;107(5):16.
- Saenz, RB. "Infant Oral Health and Breastfeeding." *American Family Physician*, 2000; 62(3):506.
- Saenz, RB. "Development of a Lactation Management Rotation for Family Medicine Residents." *Journal of Human Lactation* 2000;16(4):342-5.

- Saenz, RB. "Which infant food is best?" Invited case for Journal of Clinical Problem-Based Learning, [serial online] Spring 2001;5:4-14. Available from: URL: <http://www.jclinpbl.org/No5/Issue5.htm>.
- Saenz, RB. "Review of 'The New York State Institute of Human Lactation presents Breastfeeding Grand Rounds, 1998 video.'" Journal of Human Lactation 2002;18(2):187.
- Arthur CAR, Saenz RB, and Replogle WR. "The Personal Breastfeeding Behaviors of Female Physicians in Mississippi." Southern Medical Journal 2003;96(2):130-5.
- Arthur CAR, Saenz RB, and Replogle WR. "The Employment-Related Breastfeeding Decisions of Physician Mothers" Journal of Mississippi State Medical Association 2003;44(12):383-7.
- Arthur CAR, Saenz, RB, and Replogle WR. "Breastfeeding education, treatment, and referrals by female physicians." Journal of Human Lactation 2003;19(3):303-9.
- Arthur C, Saenz R, Replogle W, Isabel K, Lam S, Peoples J. (in progress) "Employment-related breastfeeding decisions among WIC participants."
- Arthur C, Saenz R, Replogle W, Lam S, Peoples J, Isabel K. (in progress) "Influences on decisions to breastfeed among WIC participants."

Monographs

1. American Academy of Family Practice Breastfeeding Advisory Committee. AAFP Breastfeeding Policy and Position Statement. Adopted by the Congress of Delegates at AAFP Annual Meeting, October 2001. Leawood, KS: American Academy of Family Practice, 2001. Revised and re-published online 2008.
2. Saenz, RB. Helping a Mother Breastfeed Her Baby with Down Syndrome. Lactation Consultant Series 2. Schaumburg, IL: La Leche League International, 2004.

Textbook Chapters

1. Saenz, RB. "Procedure: Colposcopy." in Rakel, RE: Saunders Manual of Medical Practice. 2nd Ed. Philadelphia: W B Saunders, 2000, pp. 541-3.
2. Saenz, RB. "Dysmenorrhea." in Rakel, RE and Bope, ET: Conn's Current Therapy 2001. Philadelphia, W. B. Saunders, 2001, pp. 1099-1100.
3. Saenz, RB. "Preventive Health Care of Adolescents." Invited chapter in Rosenfeld, J, ed. Handbook of Women's Health: an evidence-based approach. New York: Cambridge University Press, 2001, pp. 15-23.
4. Saenz, RB. "Nipple Discharge." Invited chapter in Jones, R, Britten, N, Culpepper, L, et al., eds. Oxford Textbook of Primary Medical Care. Oxford, UK, Oxford University Press, 2004, pp. 848-51.

Published Abstracts

1. Saenz, RB and Manning, KL. "Resident Physicians' Knowledge of Breastfeeding and Lactation Management Increases after Participation in Structured Curriculum." Academy of Breastfeeding Medicine News and Views, 3(3): 6. (Peer reviewed)

2. Saenz, RB. "Development of an Elective Rotation in Lactation Management for Family Medicine Residents." *Academy of Breastfeeding Medicine News and Views* 1999; 5(3): 25. (Peer reviewed)
3. Arthur, CR and Saenz, RB. "Female Physicians as Breastfeeding Role Models?" *Academy of Breastfeeding Medicine News and Views* 2000;6(3):21. (Peer reviewed)
4. Vigour E, Saenz R, and Replogle W. "Effect of Progestin-only Contraception on Milk Production in Mothers of Preterm Newborns." *Academy of Breastfeeding Medicine News and Views* 2003;9(4):20. (Peer reviewed)
5. Saenz, R. "Bacterial Pathogens Isolated from Nipples Wounds: A Four-Year Prospective Study." *Breastfeeding Medicine* 2007; 2(3):190. (Peer reviewed)

Grants Awarded:

- 1999 Equipment grant, Medela, Inc. Principal Author.
- 1999 Equipment grant, Hollister, Inc. Principal Author.
- 2008 Medela Lactation Consultant Hall of Excellence Grant.

Presentations: (last 5 years only)

International

1. Vigour E, Saenz R, and Replogle W. (2003, October) "Effect of Progestin-only Contraception on Milk Production in Mothers of Preterm Newborns." Research poster presentation. Eighth International Meeting of the Academy of Breastfeeding Medicine, Chicago, IL.
2. Saenz, R. (2007, October) "Bacterial Pathogens Isolated from Nipple Wounds: A Four-Year Prospective Study." Research poster presentation. Twelfth International Meeting of the Academy of Breastfeeding Medicine, Fort Worth, TX.

Regional

1. Saenz, RB. (2003, April) Mother's Body Knows Best: Nutritional Differences Between Human Milk and Its Substitutes. Invited workshop for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
2. Saenz, RB. (2003, April) Breastfeeding and Breast Milk Feeding in the NICU. Invited workshop for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
3. Saenz, RB. (2003, April) Yellow and Sour: Treatment of Jaundice and Hypoglycemia in Breastfeeding Neonates. Invited workshop for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
4. Saenz, RB. (2004, April) The Hows and Whys and What-to-do's of Low Milk Supply. Invited

workshop for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.

5. Saenz, RB. (2004, April) Pick My Brain! Requested question and answer session for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
6. Saenz, RB. (2004, April) Going Home Breastfeeding: Getting NICU Premies to Breast. Invited workshop for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
7. Saenz, RB. (2004, April) Red Flags: A Case Study. Invited workshop for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
8. Saenz, RB. (2004, October) Breastfeeding Shouldn't Hurt! Invited workshop for La Leche League of AL/MS/LA Area Conference for Leaders.
9. Saenz, RB. (2004, October) Whoever Heard of Too Much Milk? Invited workshop for La Leche League of AL/MS/LA Area Conference for Leaders.
10. Saenz, RB. (2005, April) Breastfeeding Shouldn't Hurt! Invited breakout workshop (2 sessions) for Breastfeeding: The Gold Standard seminar for healthcare professionals, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
11. Saenz, RB. (2006, April) Controversies in Infant Sleep. Invited breakout workshop (2 sessions) for Breastfeeding: The Gold Standard conference for healthcare professional, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
12. Saenz, RB (2007, April) Supporting the Employed Breastfeeding Mother. Invited breakout workshop. (2 sessions) for Breastfeeding: The Gold Standard conference for healthcare professional, sponsored by the Mississippi State Department of Health WIC and La Leche League of AL/MS/LA.
13. Saenz, RB (2008, April) REAL Reasons Women Aren't Breastfeeding Long Enough. Invited general session for Breastfeeding: The Gold Standard conference for healthcare professionals, sponsored by the Mississippi State department of Health WIC and La Leche League of AL/MS/LA.
14. Saenz, RB (April, 2008) The Softer Side of Science: Putting the Warm Fuzzies Back Into Lactation Consulting. Invited general session for Breastfeeding: The Gold Standard conference for healthcare professionals, sponsored by the Mississippi State department of Health WIC and La Leche League of AL/MS/LA.
15. Saenz, RB (April, 2008) Nipple Soreness: Some New Information on an Age-Old Problem. Invited breakout workshop for Breastfeeding: The Gold Standard conference for healthcare professionals, sponsored by the Mississippi State department of Health WIC and La Leche League of AL/MS/LA.
16. Saenz, RB. (July, 2008) Getting It Right: Working with Mothers on Latch. Breakout Session for La Leche League Eastern United States Division Leader Development Seminar.

17. Saenz, RB. (April, 2009) An Ounce of Prevention. General Session for Breastfeeding: The Gold Standard conference for healthcare professionals, sponsored by Mississippi State Department of Health- WIC and La Leche League of AL/MS/ LA.

State

1. Saenz, RB. (2003, March) Getting An Early Start: Facilitating Breastfeeding in Near-Term Infants.
Invited speaker for Mississippi State Department of Health Child Health Conference, Philadelphia, MS.
2. Saenz, RB. (2003, December) Fitting Breastpump Flanges. Invited speaker for Mississippi Breastfeeding Coalition. Jackson, MS.
3. Saenz, RB. (2004, July) Red Flags: A Case Study. Invited speaker for Louisiana WIC-Breastfeeding Conference, New Orleans, LA.
4. Saenz, RB. (2004, July) Yellow and Sour: Management of Jaundice and Hypoglycemia in Breastfeeding Newborns. Invited speaker for Louisiana WIC-Breastfeeding Conference, New Orleans, LA.
5. Saenz, RB. (2004, July) Low Milk Supply: The Hows and Whys, and the What-to-do's. Invited speaker for Louisiana WIC-Breastfeeding Conference, New Orleans, LA.
6. Saenz, RB. (2005, March) The Outcome-Based Infant Feeding Decision. Invited speaker for Mississippi Chapter American Academy of Pediatrics Spring Meeting.
7. Saenz, RB. (2005, July) Drugs and Breastfeeding. Invited speaker for the Mississippi Association of Health System Pharmacists.
8. Saenz, RB. (2007, January) Clinical Guidelines for Establishment of Exclusive Breastfeeding in the Early Postpartum Period. Invited speaker for the Mississippi Chapter meeting of the Association of Women's Health, Obstetrics, and Neonatal Nurses.
9. Saenz, R. (2007, December) "Bacterial Pathogens Isolated from Nipple Wounds: A Four-Year Prospective Study" Invited speaker for monthly meeting of Mississippi Breastfeeding Coalition.
1. Saenz, RB (2008, February) "Welcoming Baby Softly – Birth Kangaroo Care and the First Breastfeed" Invited speaker for the Mississippi Chapter meeting of the Association of Women's Health, Obstetrics, and Neonatal Nurses.

Local

1. Saenz, RB. (2003, May) Yellow and Sour: Treatment of Jaundice and Hypoglycemia in Breastfeeding Neonates. Invited speaker for Neonatology Grand Rounds, Forrest General Hospital, Hattiesburg, MS.
2. Saenz, RB. (2003, June) Yellow and Sour: Treatment of Jaundice and Hypoglycemia in Breastfeeding Neonates. Invited speaker for Mississippi Breastfeeding Coalition, Jackson, MS.
3. Saenz, RB. (2003, November) Going Home Breastfeeding. Invited speaker for Neonatology Journal Club, Jackson, MS.
4. Saenz, RB. (2004, April) Interview for health column in Clarion Ledger newspaper, Jackson, MS.
5. Saenz, RB. (2004, April) Interview for WAPT-16 morning news show health segment.
6. Saenz, RB. (2004, December) More Than Lipservice: What Obstetricians Should Know About Breastfeeding. Grand Rounds for Department of Obstetrics and Gynecology, University of Mississippi Medical Center.
7. Saenz, RB. (2006, January) Embryo Adoption. Invited speaker for health-related professions course on bioethics.
8. Saenz, RB. (2007, June) Slow Weight Gain in Breastfeeding Infants. Invited speaker for Pediatrics case conference, Department of Pediatrics, University of Mississippi Medical Center.
9. Saenz, RB. (2009, November) Mother's Body Knows Best: The Gold Standard of Infant Feeding and Nutrition. Invited guest lecture for Nutrition Class at Hinds Community College, Rankin Campus.

Other Professional Accomplishments:

1997-2003 Founded UMC Breastfeeding Consult Service, which served as a statewide referral center for mothers experiencing problems with breastfeeding.

2003 Opened Mississippi Breastfeeding Medicine Clinic July 1, 2003 – referral center for Mississippi and surrounding states for mothers and babies experiencing problems with breastfeeding.

2008 Began self-publishing Tips From the Trenches – an online (e-mail distribution and Facebook) series of patient education handouts on various breastfeeding topics.

Other: (Describe):

Planner, Faculty and Content Specialist Conflict of Interest Statement

If you are in a position to control the content of this educational activity (planner, faculty, content specialist), you must disclose whether or not you have a conflict of interest. Conflict of interest disclosure identifies the presence **or** absence of *any* potentially biasing relationship of a financial, professional or personal nature. A perceived conflict of interest would occur, for example, if you have or a member of your family has, within the past 12 months, received a salary, royalty, speaking honorarium, research appointment, board of directors remuneration, or consulting fee from an organization whose product or service is being discussed in the learning activity or if you or a family member own stock in such a company. Conflict of interest would also occur if you have any potential to benefit personally or professionally from the presentation (work for a proprietary company presenting the learning activity, have written a book about the topic, provide consulting services related to the topic, etc.)

All information disclosed must be shared with the audience on the program handouts, advertising and/or audiovisual presentation.

Section 4: (Planner and/or Speaker) Conflict of Interest

Is there a perceived financial, professional or personal conflict of interest (self or family)?

Yes

No

If yes, describe the perceived conflict:

Section 5: (Planners and/or Speaker) Resolution of Conflict

Procedures used to resolve conflict of interest or potential bias if applicable for this activity: (Check all that apply)

1. I have discussed this conflict with the nurse planner and agree to the provider unit's policy.

2. I have signed a statement that says I will present information fairly & without bias.

3. In conjunction with 1 & 2, I understand that the nurse planner or designee will monitor session to ensure conflict does not arise.

X 4. Not applicable since no conflict of interest.

5. Other: Describe:

Section 6: (Speaker) Off-label Use

Presenter/Content Specialist discussion of off-labeled uses:

Yes

x No

If yes, you must disclose this information during your presentation. How will you do this?

- 1. Verbal statement during the presentation
- 2. Information provided on handouts
- 3. Information provided in audiovisuals (slides, overhead, etc.)
- 4. Other: Describe:

Section 7: (Speaker) In regard to the above requirements, please check one of the following:

- x My presentation(s) will not refer to products, drugs or devices of a commercial company with which I have a significant relationship. I have not accepted a fee from a commercial company for this presentation.

- I have a significant relationship with the following commercial company(s) whose product(s) I will refer to in my presentation. I will disclose my relationship with the commercial company to the participants during the introduction of my session. I will refer to other products equally in my presentation. I have not accepted any fees from a commercial company for this presentation.

List company(s):

Section 8: (Planner and/or Speaker)

Signature _____

Date: __January 7, 2010_____

Electronic Signature acceptable

An authentic signature must be provided. A faxed copy with the signature or a computerized generated signature is acceptable. A typed name is NOT acceptable.