



# In Search of The Natural Weaning Age Of Humans

# There are different weanings...

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- ❑ Breaking exclusivity of breastmilk with formula or solids is the beginning of intestinal changes=intestinal weaning
- ❑ Night weaning/public weaning
- ❑ Weaning from breast
- ❑ Weaning from bottle
- ❑ Pacifier, thumb



# WHEN SHOULD FINAL WEANING OCCUR?

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- When are we “naturally” intended to wean? Begin weaning? Final weaning?
- How have humans weaned through the millennia?
- What do the “experts” say?
- What’s the research show?

Archeological  
Findings Suggest  
Weaning Ages  
Throughout  
The Millennia



# 2,000,000 to 10,000 years ago

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Borresen, J Hu Lact 1995

- Commonly found patterns of wide birth spacing (3 years) among paleolithic hunter-gatherers indicate that our “ancestors must have given very little supplementary food in the first 2 years postpartum.”

- ❑ **Anthropologists can “read” certain defects found in children’s teeth from archeological digs, making inferences about when supplementary foods have begun and when weaning was well underway or nearing completion.**
- ❑ **It is accepted theory among these scientists that the weaning process causes stresses on a child’s health and the effects of these stresses are exhibited in their developing teeth.**
- ❑ **Weaning is also found to be associated with a greatly increased risk of death. Major signs of child stress indicate abrupt weanings.**



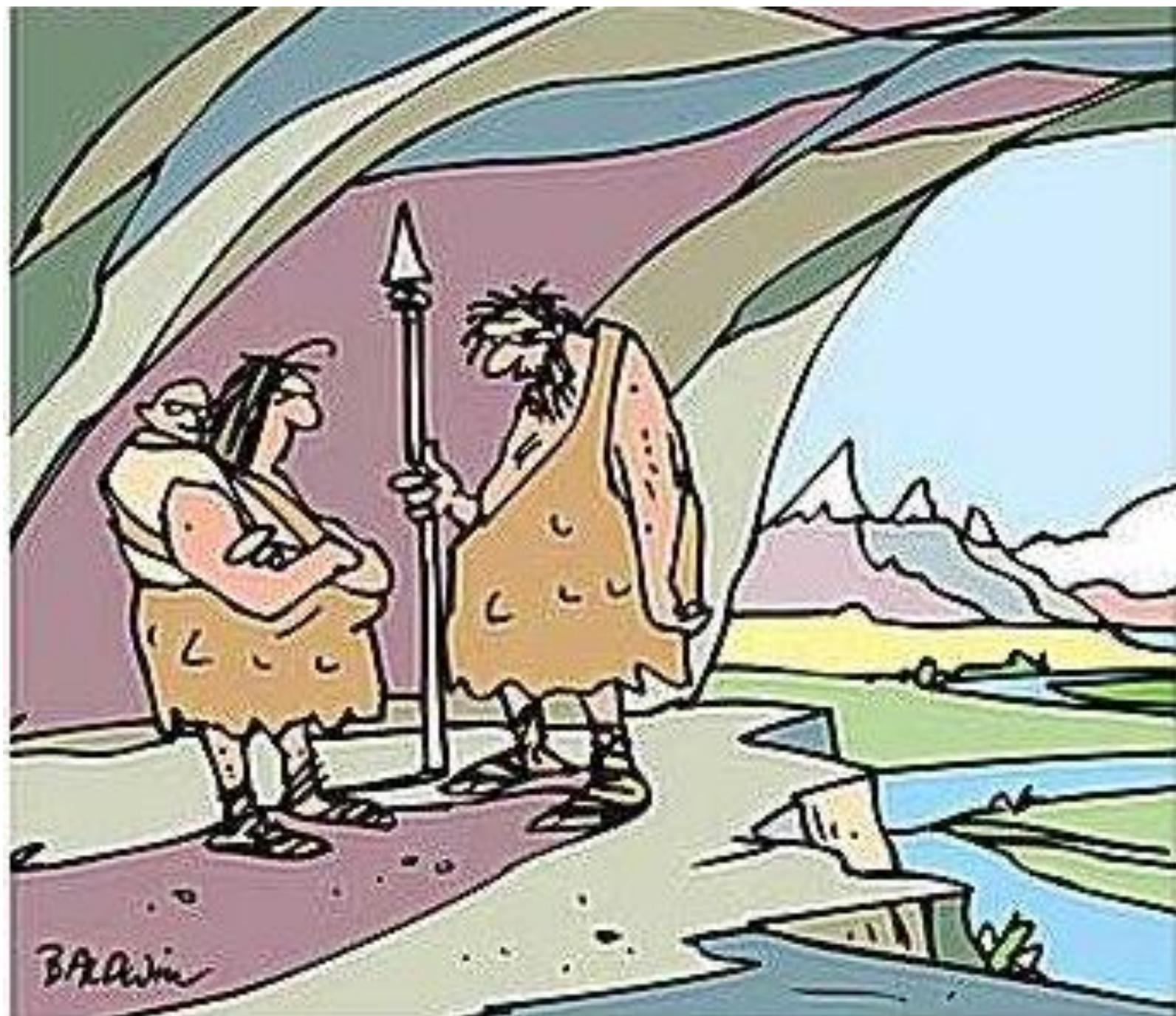
- Thought to be more accurate:  
**Measuring various element isotope findings in bones**

- Better clues about the final end of breastfeeding.

- Large numbers of children have been evaluated at sites from hundreds to many thousands of years old at digs from all around the world.

- There are some questions about the accuracy of using dental signs so I bring mostly epitope studies, but none are available for the oldest populations.





# 12,000 and 1.8 million years ago:

## Spain

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- "Enamel hypoplasias and physiological stress in the Sima de los Huesos Middle Pleistocene hominins," Cunha et al., *Am J Phys Anthropol.* 2004
- **Low level of developmental stress**
- "The majority of linear enamel defects in the sample occurred **during the third year of life** and may be related to the metabolic stress associated with weaning."
- (Doesn't indicate an end-point, rather a significant portion of solids)

# South Africa: 5,000 years ago

Clayton et al., "Weaning age among foragers at Matjes river rock shelter, South Africa, from stable nitrogen and carbon isotope analyses," *Am J Phys Anthropol.* 2006 Feb;129(2):311-7.

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- "We deduce that children... were breastfed for at least the first 1.5 years after birth, and were weaned sometime between 2-4 years of age."
- "...even when those foragers lived in an environment with abundant food resources."
- "!Kung women (today) are said to believe that their children should have strong legs, and a diet of mother's milk is the way to achieve this. They are also of the opinion that a child needs breastmilk until it is at least 3 or 4 years old."

# California: 4500 years ago and forward

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Schulz PD, "Age distribution of enamel hypoplasia in prehistoric California Indians." *J Dent Res.* 1975 Jul-Aug;54(4):913.

- Among Californian Indian finds from 2500 BC to 1800AD, enamel hypoplasia (representing period of greatest physical vulnerability) "is most common during the 5<sup>th</sup> year, and none was detectable in the 1<sup>st</sup> year."
- "There is no significant change in the hypoplastic age profile (in Californian Indians) through archeological time."

# Egypt: 2300 to 4700 years ago

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- **Infants were breastfed for up to 3 years**
- **Supplementary foods were introduced into the diet starting at around 6 months**



# Guatemala: 500 to 2700 years ago

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Wright, 1998

- “Kaminaljuyu children had **begun to eat solid maize foods before the age of 2 years but continued to drink breast milk until much later.**”



# Romano-Christian period 1550–1750 years ago

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Tosha, 2001

- **“At the same time that they were being weaned, however, they display a distinctive increase in  $\delta^{13}\text{C}$ , which we attribute to the consumption of dairy milk from cows, or goats, part of whose diet included C4 millet.”**
- **“These observations are consistent with traditional weaning practices of the Roman era. They advised that supplementary foods, specifically a mixture of honey and goat’s milk, should be introduced at approximately 6 months of age and that infants should be breastfed until approximately 3 years of age.”**

# Germany: 1300 to 1500 years ago

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Dittmann, 2000

- **“Onset of weaning was by 1 year of age, when solid vegetable food subsequently replaced breast milk.”**
- **“In total, the change from mother's milk to solid adult food took about 3 years, the infants being fully weaned at this age.”**

# Mississippi 800 years ago and Illinois 1000 years ago

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Goodman, 1984

- "... a common peak frequency of hypoplasias **between 2.0 and 4.0 years**"



# England: 650 to 450 years ago

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Fuller, 2006

- “After the average age of 2 years... introduction into the diet of weaning foods”
- “The cessation of breastfeeding... was **highly variable** and probably gradual.”
- “Some infants seem to have been fully weaned by 1.5–2 years, **whereas others apparently had some breast milk in their diet as late as 3–4 years and possibly even 5.5 years**”

# America 100 to 200 years ago

Lamphear, 1990

- an industrializing population...
- **“Age at peak stress between 2.5 and 4 years”**
- “... transects the ranges reported for prehistoric populations (2-6 years) and for modern groups (0-3 years).”



# America 100 to 200 years ago (continued)

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Lamphear, 1990

- “These results indicate that **the stress associated with weaning probably occurred earlier in [beginning] industrial societies** than in prehistoric hunter/gatherers and agriculturalists,
- yet not as early as in modern industrial groups.”
- “The **high level of childhood stress** in this skeletal sample compared with that of other samples may **indicate a change in health, at least among the lowest class, associated with the cultural transition from an agricultural to an industrial society.**”

# Weaning Yesterday and Today

**Isis breastfeeding Horus**



# Consequences of early cow's milk diets

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Hogan et al. "The social bases of declining infant mortality: Lessons from a 19th-century Italian town." *Eur J Popul.* 1987 May;2(3-4):361-85.

- ❑ Infant mortality for "women who worked in emerging textile factories who could not breastfeed and used animal milk":  
**682 deaths per 1000** in 1903" ...
- ❑ Compare this to overall infant mortality at that time:  
100/1000 in 1900  
and 75/1000 in 1910
- ❑ It's evident that the infant death rate for those being fed animal milks was around 7 times the overall infant death rate.

# Weaning Yesterday & Today

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- ❑ Still risky today, early supplementing with animal milks or solids were even riskier prior antibiotics and advanced sanitation, meaning life-threatening respiratory and diarrheal diseases
- ❑ Early animal milk or solids means malnutrition as well as blocking breastmilk's immune protections
- ❑ Today's formulas lead to less nutritional challenge but still block the immune protective bubble that only exclusive breastmilk can provide
- ❑ Based upon the clear risks of supplementing: **Early 1900's pediatricians recommended no solids before 12 months**



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- In the 1960's a grow-that-baby-up competition began... Potty training at 14 to 18 months...
  - Parents were taught to encourage baby to overcome the natural tongue thrust
  - Concept of a "GOOD parent/GOOD baby"
  - 1970 AAP recommended anywhere from 4 days to 4 months for solids introduction
  - 1995 WHO said between 4 & 6 months "and not later than six months"

# Today's recommendations

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- ❑ Today, AAP recommends "somewhere during the second half of the first year." Most pediatricians interpret that as beginning solids at 6 months
- ❑ And baby food companies perpetuate this innaccurate interpretation



# Nature's Final Weanings

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- Typically we see mother mammals taking some initiative in the weaning process
- **Lactose** is nature's final assurance... Only found in milks, lactose naturally causes gas and pain in older child mammals (and adults) as lactase enzyme (for lactose digestion) is naturally lost in childhood, assuring that a child will stop nursing by the age of 6 or 8. Humans of Northern-European descent have developed lactase enzyme persistence over the last few millennia from their attempts to survive in further and further Northern regions by depending upon the milk of cows.

# Starting Solids?

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Delaying Solids: Is Breastmilk Enough?  
What Does Breastmilk Become Deficient In?  
Cow's Milk Instead of Human Milk?  
What to Feed First  
What About Home Made Formulas?  
Goat's Milk? Raw Milks?

*See my slide presentation:*

**BEYOND BREASTMILK**

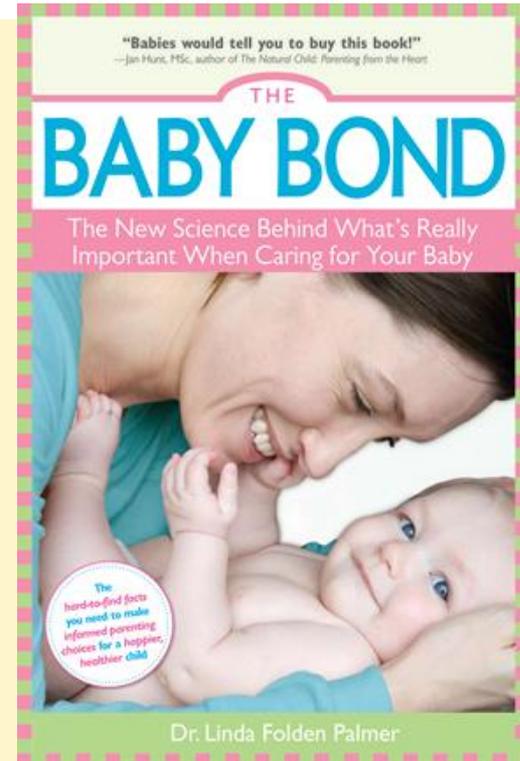
<http://www.babyreference.com/BEYONDBREASTMILK.html>

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[LFPalmer@BabyReference.com](mailto:LFPalmer@BabyReference.com)

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