A Natural Age of Weaning

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My research has looked at the various "life-history" variables (such as length of gestation, birth weight, growth rate, age at sexual maturity, age at eruption of teeth, life span, etc.) in non-human primates and then looked at how these variables correlate with age at weaning in these animals. These are our closest relatives in the animal kingdom, especially gorillas and chimpanzees, who share more than 98% of their genes with humans. I came up with a number of predictions for when humans would "naturally" wean their children if they didn't have a lot of cultural rules about it. This interest stemmed from a reading of the cross-cultural literature on age at weaning, which shows that cultures have very different beliefs about when children should be weaned, from very early in the U.S. to very late in some places. One often hears that the worldwide average age of weaning is 4.2 years, but this figure is neither accurate nor meaningful. A survey of 64 "traditional" studies done prior to the 1940s showed a median duration of breastfeeding of about 2.8 years, but with some societies breastfeeding for much shorter, and some for much longer. It is meaningless, statistically, to speak of an average age of weaning worldwide, as so many children never nurse at all, or their mothers give up in the first few days, or at six weeks when they go back to work. It is true that there are still many societies in the world where children are routinely breastfed until the age of four or five years or older, and even in the United States, some children are nursed for this long and longer. In societies where children are allowed to nurse "as long as they want" they usually self-wean, with no arguments or emotional trauma, between 3 and 4 years of age. This interest also stemmed from the realization that other animals have "natural" ages of weaning, around 8 weeks for dogs, 8-12 months for horses, etc. Presumably these animals don't have cultural beliefs about when it would be appropriate.

Some of the results are as follows:

1. In a group of 21 species of non-human primates (monkeys and apes) studied by Holly Smith, she found that the offspring were weaned at the same time they were getting their first permanent molars. In humans, that would be: 5.5-6.0 years.

2. It has been common for pediatricians to claim that length of gestation is approximately equal to length of nursing in many species, suggesting a weaning age of 9 months for humans. However, this relationship turns out to be affected by how large the adult animals

are -- the larger the adults, the longer the length of breastfeeding relative to gestation. For chimpanzees and gorillas, the two primates closest in size to humans and also the most closely genetically related, the relationship is 6 to 1. That is to say, they nurse their offspring for SIX times the length of gestation (actually 6.1 for chimps and 6.4 for gorillas, with humans mid-way in size between these two). In humans, that would be: 4.5 years of nursing (six times the 9 months of gestation).

3. It has been common for pediatricians to claim that most mammals wean their offspring when they have tripled their birth weight, suggesting a weaning age of 1 year in humans. Again though, this is affected by body weight, with larger mammals nursing their offspring until they have quadrupled their birth weight. In humans, quadrupling of birth weight occurs between 2.5 and 3.5 years, usually.

4. One study of primates showed that the offspring were weaned when they had reached about 1/3 their adult weight. This happens in humans at about 5-7 years.

5. A comparison of weaning age and sexual maturity in non-human primates suggests a weaning age of 6-7 for humans (about half-way to reproductive maturity).

6. Studies have shown that a child's immune system doesn't completely mature until about 6 years of age, and it is well established that breast milk helps develop the immune system and augment it with maternal antibodies as long as breast milk is produced (up to two years, no studies have been done on breast milk composition after two years post partum).

And on and on.

The minimum predicted age for a natural age of weaning in humans is 2.5 years, with a maximum of 7.0 years.

In terms of the benefits of extended breastfeeding, there have been a number of studies comparing breastfed and bottlefed babies in terms of the frequency of various diseases, and also IQ achievement. In every case, the breastfed babies had lower risk of disease and higher IQs than the bottle-fed babies. In those studies that divided breastfed babies into categories based on length of breastfeeding, the babies breastfed the longest did better in terms of both lower disease and higher IQ. In other words, if the categories were 0-6 months of breastfeeding, 6-12 months, 12-18 months and 18-24+ months, then the 18-24+ month babies did the best, and the 12-18 month babies did the next best, and the 6-12 months babies did the next best, and the 0-6 months babies did the worst of the breastfed groups, but still much better than the bottlefeeding group. This has been shown for gastrointestinal illness, upper respiratory illness, multiple sclerosis, diabetes, heart disease, and on and on and on. Likewise, the babies nursed the longest scored the highest on the IQ tests. One important point to notice is that none of these studies looked at children who had nursed longer

than 2 years. Anyone 18-24 month or longer was lumped into big category. Presumably, the benefits continue to accrue, as your body doesn't *know* that the baby has bad a birth day and suddenly start producing nutritionally and immunologically worthless milk.

However, no one has yet proved, either way, that the benefits of breastfeeding either continue or stop at two years of age, because the appropriate studies have not been done. The trend during the first two years is clearly for continuing benefits the longer you nurse. Clearly the phenomenon of diminishing returns is at work here -- the first six months of breastfeeding are clearly much more important in terms of the baby's nutrition and immunological development than the six months from 3.5 to 4.0 years. That doesn't mean that you shouldn't continue to provide breast milk if your baby wants and you don't mind. It would be like saying, "Well Mabel, we don't get very much income from that oil well anymore. Used to get $56 a month in royalties, now we're lucky if we get $25 a year. Guess we should tell that oil company just to keep their durn money." And Mabel says, in return "Good grief, Clyde, don't be ridiculous. That check still buys $25 worth of food. Where has your mind gone to now?"

Clearly, babies born in the U.S. don't have to contend with all the diseases and parasites and contaminated water that babies in Third World countries do. We have more supplementary foods that we can generally trust to be safe and clean. We can get our children immunized, and get them antibiotics for infections when necessary. The fact that we *can* does not mean that breastfeeding is unimportant. Breastfed babies still have the "edge" over bottlefed babies, even in a squeaky clean environment with wonderful medical care. They get sick less often, they are smarter, they are happier. Another important consideration for the older child is that they are able to maintain their emotional attachment to a person, rather than being forced to switch to an inanimate object such as a teddy bear or blanket. I think this sets the stage for a life of people-orientation, rather than materialism, and I think that is a good thing. I also can't imagine living through the toddler years without that close loving connection to a child going through enormous changes, some of which are very frustrating to the child. I could go on forever, but will stop here.

I hope this has been of help. These ideas are developed much more eloquently and in much greater detail in my chapter "A Time to Wean" in Breastfeeding: Biocultural Perspectives, being published by Aldine de Gruyter.

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