

## **Learning Emotional and Nutritional Nurture through the Lifecycle**

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### **We are Still Evolving - for Better or Worse?**

Without understanding our origins and evolution we cannot successfully manage our future. Anyway I find it exciting to retrace our own evolution back to our physical origins, through the formation of the elements composing us, even to the Big Bang. We gain a picture of how, from this singularity built up, the complexity of atoms and molecules, nutrients and cells, into the remarkable organisms which we are today. The overall picture helps us to discern the factors that have been so important in becoming who we are - so important to our sight, hearing, and touch, to our sensitivity and love - to discern these from the factors militating against our physical and mental health, against our very spirituality, and ability to live in social peace. For these adverse factors could be as catastrophic to us as climate change.

Consider the current state of mental health.



### **Mental Health and Mental Ill Health Costs**

The annual cost in the USA of mental ill health and other brain related disorders is over \$100 billion, to which has to be added the cost of work lost. The impression is an overall cost exceeding \$500 billion. [1,2] Likewise for Europe, including work lost, the overall annual cost has risen to over 500 billion Euros. A summary of full costs records: ". . the true economic cost of disorders of the brain is substantially higher than our estimate of 386 billion Euros, perhaps in the range 500-700 billion Euros" (near \$1 trillion) - and over a quarter of Europeans are "living with a brain disorder".[3] Moreover the effects of under-nutrition linger for generations.

### **We Understand Some Important Solutions**

There is good news: our growing know-how to attune our lifestyle to the mutual benefit of our planet - our biosphere - and ourselves. Authorities are beginning to grasp the potential of caring for human lives at their beginning. Hillary Clinton has spoken out: "Nutrition plays the most critical role in a person's life during a narrow window of time - the 1,000 days that

begin at the start of a pregnancy and continue through the second year of life, (which) can help determine whether a child will . . experience enough brain development to go to school and hold a job as an adult." Clinton adds "The science of nutrition points to a strategy. If we target that brief critical period . . we can accomplish several things at once. We can save lives, we can help children start life on a better path, and we can bolster economic development and learning down the road." [4]

### **Nurturing Children Requires Informed Nutritional as well as Emotional Understanding**

The fittest stage in the life of the human species was probably as waterside hunter-gatherer; fittest in the sense of healthiest, and also best fitted to environment. The effects of the agricultural revolution on our reproductive health have only recently been recognized. Reductions in seafood and in physical activity, have been aggravated in the last century by intensive farming (second agricultural revolution) and food-marketing, particularly to children. These have been excessively profit-driven; some innovations are affecting brain development through several specific stages, from embryonic until adulthood. As early as possible children need to be learning, from sound nurturing and from intelligent understanding, how to make sound choices.[5,6] The key is provision of the right environment, not only parental but also ecological. As the human brain changes the biosphere and the changed biosphere affects our brain, we must protect the delicate processes of each.

### **Tackling Brain-Food Shortage and Carbon Dioxide Excess in One Step**

How can we reverse the drastic trends in brain disorders and the environment? Essential now to health of the biosphere, including our human species, is a third agricultural revolution. This time, agriculture of the ocean-beds and shores have priority, in order to sustain and develop the bio-resources at the root of our evolution on which our life and biodiversity still depend today. Our latest warning: of the Philippines' coral reefs only 5% remains healthy. The fight is on to restore the coastal sea-beds of their thousands of islands. A high percentage of this destructive pollution comes from run-off of fertilizers and farm slurry. Draconian steps have necessarily begun, to cut industrial pollution destroying our biosystem, and to build sound systems of marine agriculture. In various seas coral replanting has begun. Since 1991, in China's Sungo Bay they have been filtering pollution with seaweed and shellfish. Japan's Okayama Prefecture is 'marine ranching', creating artificial reef and rock habitats among its islands.[7] Such measures are essential if only to meet the human brain's prime need for the marine source of nutrients - omega-3 DHA particularly, critically at its greatest during gestation and brain development.[8,9] While healing fertile marine regions is basic to restoring human brain health in today's mental health pandemic, replenishing the micro-organisms that produce DHA through photosynthesis also helps to lower the carbon dioxide level. They absorb as much carbon dioxide as all the rainforests.

### **Mechanisms of Environment and Health**

We are learning how our environment affects us through epigenetic mechanisms, and how genomic imprinting helps to stabilize a species between generations. This raises scientific sensitivity in steering a way through today's artificial conditions of life, for the sake of our health, our future evolution, and of the planet we inhabit.[10]

### **Prepare for a Healthy and Happy Child**

Men and women who live healthier lives on a sound diet are more likely to have healthy and happy children. Healthy living needs to begin as far in advance of conception as possible. This will contribute also to healthy grandchildren! We need to build up body-stores of the most important nutrients - vitamins and minerals, and omega-3s (DHA and EPA), which means appropriate fish or algae. The estuary shores were the evolutionary cradle of mammalian life, and later of the human brain. They offered shellfish that pregnant women could pick up for themselves. Evolution has been most creative where the assembly of nutrients has been richest - along the shores. Here the combination of omega-3-rich waters with omega-6-rich seeds of flowering plants, with vitamins and minerals from land and water plants, gave rise to the 'Cambrian Explosion', the most rapid diversification of species ever. This would lead on to the pinnacle of evolution, the human being and large brain.

Especially for conception, pregnancy and breast-feeding, nutrient levels need to be optimal. Farmers, for their livestock, have traditionally kept the best of their fields and feeds for the run-up to the mating season.

Genesis of sperm may be many months before fertilization. Every oocyte (egg-to-be) has lain dormant in the female since before her birth. Once mature, seven weeks before ovulation, an oocyte 'wakes up'. It needs to build up food-stores for fertilization and then the 8-day journey to the womb-wall. Also developing before conception is a gland to sustain pregnancy. All this I explained in detail in: *Stages in reproduction particularly vulnerable to xenobiotic hazards and nutritional deficits: Generating Healthy People*,[11] also on Medline.

In the first month of gestation, the neural tube is forming with the earliest brain-cells. By two months the baby is basically completed. So any imperfection in these months can most readily magnify with development. Nutritional demands of course increase with sheer size and growth-rate, but rapid brain expansion in months six to nine means huge demands for DHA and EPA - and some omega-6 arachidonic acid (AA). A baseless scare by an American advisory to avoid more than two helpings of fish a week on account of pollutants, has been contradicted: in the continuing ALSPAC-Study (Avon Longitudinal Study of Parents and Children) of the University of Bristol. Scientists conducted a fully controlled trial with over 8000 pregnancies, which showed that mothers who had eaten more than 2 helpings of fish had more able children.[12] They had significantly higher verbal intelligence quotients and higher scores in fine motor skills, communication, pro-social behaviour, and social development! Warnings are that today's quick-growth farmed meats are low in nutrients, high in harmful fats; and that many manufacturers add cheap weight and taste to their products with salt, sugar and fats. These are seriously damaging, and leading to the pandemics of obesity, diabetes and cardiovascular and mental disorders.

### **Is it Worth It?**

Many would-be parents wonder if sacrificing pleasures of alcohol, smoking, and salty French Fries could be worth it. Apart from greatly reducing the risks of cancer and heart problems, if you are healthier, you feel better, so life is more fun, and you are capable of more! There was a time when doctors thought the placenta was a near-perfect protective barrier. Not so! For some substances it is the 'placental pump': valuably it concentrates DHA for the brain,

but it also concentrates certain toxins. Apart from well-known dangers, smoking prejudices the health of a child, and increases the risk of miscarriage by one-and-a-half times. I once wrote an article *Is it legal for a baby to smoke - even before birth?*! A little wine will do most people no harm, except in relation to conception and pregnancy, when alcohol increases the risk of miscarriage by 2 1/2 times. But smoking and drinking combined increases the risk of miscarriage 4 times.[11] After serious problems, thousands of couples in the Foresight Preconception Care program [13,11,6] having given up these habits, have been overjoyed on the arrival of a baby, a fully healthy baby. That joy surely outstripped any fun they may have missed.

Animal studies indicate that sperm seem to be increasingly vulnerable to toxins in the days before ejaculation.[11,6] Ovum and sperm both seem most vulnerable around conception.

Foresight check analyses of hair and nail clippings rather than blood samples, which fluctuate. They assess nutritional deficits; toxins - smoking, drinking, drugs including medicines - and industrial pollutants - heavy metals are 'chelated'; and diseases, often undetected, are treated. In the months before intended conception, condoms replacing hormonal contraceptives can allow time for their clearance, and for a build-up of nutrition and health.

### **A Late Start is Still Worth It**

Even for the many unintended pregnancies, much can still be done to give the baby the best environment possible. As soon as a woman realizes she is pregnant, it is well worth her ensuring a good diet, especially of fish or algae, fruit and vegetables, supplemented as above if need be, and keeping off toxins - the sooner the better, as indicated by the stages of development outlined above. Clearly it is best not to worry about what has so far happened but to make the most from now on.

Prenatal bonding has become recognized widely and scientifically as important to the baby, and valuable to the parents too. Especially in a pregnancy which is at first unwanted, the pre-birth child can gain from the mother's - and if possible father's too - recognition of what is good about having a baby. They can welcome their child and hold images of enjoyment. So many a conception, at first an unwanted surprise, has turned out to be a great blessing. Statistical assessments of prenatal feelings and attitudes to the child, show how powerful these are on the child's happiness and potential.

### **Patience**

Changing eating habits and lifestyles can be difficult. The effort, even agony, of giving up smoking or other addictions is well-known, but many also know the great rewards. Release from harmful habits and lifestyles, and from the stress that underlies them, can be assisted by modern counselling. Patience is needed. An overweight person should not diet too severely, since sudden deprivation of nutrients can cause organic tissues harmfully to take up stored saturated fat.

### **Sense of Security and Being Loved**

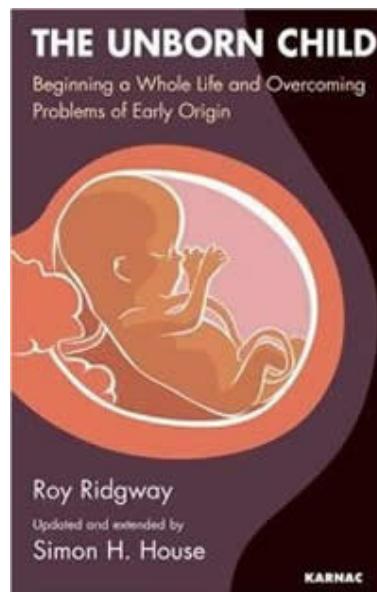
During pregnancy the mother's stress is the most adverse emotional hazard for the baby.

Even if you could remove all stress, it might not be beneficial, but chronic stress from difficult relationships, at home or work, is best kept as low as possible. Enabling the mother to feel secure is basic. Family affection and reassurance, counselling and family-therapy will help. Massage, craniosacral especially, can reduce effects of stress, particularly in a child or mother after a difficult birth. A therapist can pick up, through scalp, feet and so on, tensions anywhere in the body. The effects of shock from, say, an earthquake or local disaster vary according to stage of pregnancy. Early in pregnancy they can increase the chance of premature birth. A shock later in pregnancy can raise the level of stress in childhood. Again, comfort and counselling of the mother can help to reduce these effects. Supportive cultures are beneficial. The culture of the Yequana tribe in Brazil is constant cosseting of a woman, as soon as she is pregnant. Then children, held in a sling until moving away of their own accord, seem to become idyllic in nature and behaviour.[14]

A new emphasis on parent-child bonding, and 'New Parenting' schemes, is bringing powerful benefits for life to our children's health and temperament, and so to society. [15,16]

### **Having Healthy and Happy Children is a Lifecycle Responsibility**

To bring healthy children into the world is a lifecycle process. Prime responsibility is the parents'. Yet grandparental, and social and cultural influence, can also be strong. As early as possible in life children need to be empowered by the way they are loved and fed, by the practice of cooking and choice of menus, and importance of exercise and understanding lifestyle. Children should be learning how to live in ways that will lead to healthy families and, throughout life, how to keep their understanding up to date.



Adolescents are wise to wait till adulthood to have children, yet still to be preparing; to have a healthy diet, plenty of fish, fruit and vegetables; plenty of exercise; a settled partner; and to opt for as natural a birth as is safe in their circumstances. Adolescent parenthood increases risks of lack of stable relationship, interrupted education, poverty and so on. Parenting courses are particularly valuable during adolescence. I recommend the paper by Jonathan D

Klein MD MPH and the Committee on Adolescence Adolescent Pregnancy[17] and also *The Unborn Child*, a highly readable handbook, structured and indexed for ready reference. It covers all these aspects with fascinating evidence and full references. I hope you will enjoy it and that it may contribute to much health and happiness in your family.[18]

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