

The importance of the first 1000 days

There's significant research to indicate that the first 1000 days (conception to age 2) is a critically important phase, indeed many claim that this time period is where the foundations of a child's development lie. This phase is the perfect chance to build a healthier future. There are many influences in this time that impact on the child's future health but one of upmost importance and close to my heart is that of formative nutrition. Just how important is food during those 1000 days? It's not just the amount of food but very much about the type of food.

We often refer to 'building blocks' in nutrition and we can certainly use that term in relation to the first 1000 days, good nutrition during this time is the foundation for early cognitive abilities, motor skills and emotional development, this is all largely due to the incredibly impressive rapid growth and development of the human brain!

Brain Development

During pregnancy the brain grows at an astonishing speed! From around the fifth week of pregnancy neurons begin to form and multiply – these grow at a staggering 250,000 neurons per minute by the middle of the second trimester. These neurons are crucial for developing connections which help shape development. In terms of energy half of the calories going into a developing baby go towards building its' brain. There is a disproportionate amount of energy going to building the brain as there is a disproportionate

amount of activity going on up there! Consider the brain an extremely complicated central computer that's growing and developing at a truly astonishing pace! What the baby gets during the prenatal stage obviously comes from the mother, so the prenatal diet is absolutely important but especially when it comes to FATS!

A lot of the energy going to build the babies brain needs to come from fats, in fact 40% of our brains are made up on EFA's (Essential Fatty Acids). The mother needs to ensure that she has enough for her and the baby as the baby will 'pinch' what it needs – this can often leave Mum feeling depleted or 'baby brain'.

Once the child is born and then growing and developing at a rapid pace, EFA deficiencies can present in the day to day functioning of a child, how well can they grasp new things? Consider a child has to learn everything, absolutely everything! They need their frontal lobe to be rich in EFA's particularly DHA to enable them to be able to problem solve, concentrate and focus.

“When a baby's development falls behind the norm during the first year of life for instance, it is much more likely that they will fall even further behind in subsequent years than catch up with those who have had a better start.”

Barnardo's quote from the House of Commons Health and Social Care Committee – First 1000 days of life 13th report of session 2017-19

There are many elements to nutrition for brain development – Fats such as the EFA's (AA, DHA, EPA and DGLA) are key as is ALA or Omega 3 and Phospholipids. As with many other elements of nutrition it is often the vitamins and minerals present or lacking in the diet that tell the bigger picture. Many nutrients are involved in maintaining and developing our brain development, these include Zinc, Iodine, Vitamin C, B vitamins, Vitamin D and Magnesium.

Top Brain Foods

- **Eggs** - A great source of Phospholipids – these are carriers of Omega 3 fatty acids and can help with learning.
- **Fish** - A great source of Essential Fatty Acids: AA, DHA, EPA, DGLA. These 4 make up 40% of our brains- a deficiency in EFAs will have a negative impact on mood, IQ and behaviour.
- **Berries** - Rich in antioxidants which support the brain and improve memory function.
- **Walnuts** – rich in DHA, these are considered the 'top nut' for brain health.



Source – *How Food Shapes Your Child (building a brain section of my book)*

Taste Development - pre conception

When it comes to taste development you may be surprised to know that some elements of this may be taking shape before the child is even conceived! Let's have a quick look at epigenetics: -

As we get half our genes from each parent, we also inherit aspects of their genome. This forms part of the transgenerational epigenetic inheritance or 'epigenome'. Put simply these are the nutrition and lifestyle factors that can potentially imprint onto your epigenome.

Unlike DNA which we can't change or influence, our nutrition and lifestyle does influence our epigenome potentially resulting in your eating habits being passed on to your children.

It isn't just our habits and preferences that get passed on via the transgenerational epigenetic inheritance many studies show how experiences and trauma can also be passed on between generations – there's a fascinating study on the Dutch Hunger Winter.

These epigenetic traits though are not, set in stone in the same way as our DNA so we can change our lifestyle and nutrition to ensure that we are passing on 'healthy heritable traits' via our epigenome. It's also worth noting that a child born having inherited 'unhealthy heritable traits' is by no means set to become unhealthy. The way they live their life can change their own gene expression to be healthier, they may be more likely to get certain things or more predisposed to be obese but they don't have to be.

Sources –
Switching Genes on and Off – *The Health Sciences Academy*

Epigenetics – *feeding the obesity and diabetes epidemic? Institute of Experimental Genetics - Helmholtz Zentrum München (Neuherberg, Germany)*

Persistent epigenetic differences associated with prenatal exposure to famine in humans - *Proc Natl Acad Sci U S A. 2008 Nov 4; 105(44)*

Taste Development - prenatal, birth and onwards

Whilst epigenetics is fascinating it's a fairly new area of study and the influence of transgenerational epigenetic inheritance is still being discovered. Perhaps easier to grasp is the concept of taste development during pregnancy and beyond birth. We know that mum is often advised to 'eat for two' but it isn't the quantity but the quality that matters!

Prenatal nutrition checklist

- Maintain a healthy weight
- Avoid the 'bad fats' and opt for plenty of 'good fats' (less processed high fat foods, more fish, eggs, nuts, seeds, avocados etc)
- Eat plenty of fibre
- Eat a naturally colourful mix of fruits and vegetables to ensure a plentiful supply of antioxidants to you and the baby
- Choose complex carbs over refined (whole grains over white)
- Eat plenty of lean protein – protein contains the building blocks of life!

It's worth mentioning that your taste preferences may become the babies taste preferences! (linked to the epigenetic inheritance above). This is particularly relevant in the third trimester so if you like sweet foods, the third trimester is not to time to over-indulge as this would very likely influence a sweet tooth in the baby!

Sugar

I always say to try not to introduce refined sugar too early – this can be via cakes, biscuits, chocolates or often, sugar is sneakily added into yogurts and even savoury foods for very young children. Sugar offers zero nutritional benefit but it does alter taste development. It may be considerably more difficult to get a baby/child to eat vegetables if they develop a liking for sweet foods, the savoury foods will simply just not be as appealing!

Sugar affects our body in various ways but

consider this stage of critical formative development, sugar brings nothing worthwhile to the party but it could cause some hidden health concerns stored away for later in life.

- Sugar is addictive – due to the dopamine response, the more you have the more you need as the satisfaction response is weakened (so you need to have more to get the benefit, hence why it is addictive and you can eat a lot of it!)
- Sugar impacts on mood, sleep, behaviour and even IQ
- Sugar is the leading contributory factor in obesity
- Children are not exempt from metabolic disorders – I have seen children as young as 8 with Type 2 Diabetes

Sources –

How Food Shapes Your Child – Sugar

Public Health England – Sugar Reduction – the evidence for action

Shaping Future Health and Habits

Food does more than simply fill up a child! When we feed a child, we also are shaping their future relationship with food. Many adults with emotional eating issues can link this back to childhood. We can help babies and children shape healthier food habits and a lifelong healthy relationship with food, but to do this we need to appreciate the true significance of the foods we feed them. We aim to do that with our menu and to show you the rationale behind our choices to ensure we give your child the best start out if their lifelong relationship with food.



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