ATTENTION-DEFICIT HYPERACTIVITY DISORDER (ADHD)

What is ADHD?

Attention-deficit hyperactivity disorder (ADHD) is a complex, multifactorial disorder. Underlying factors include a combination of genetics, events during foetal development and 1-4 weeks after birth, environmental causes, neurobiological mediators, and psychosocial influences. ADHD is the most commonly diagnosed behavioural disorder in childhood, with a prevalence of 4-12% for school-age children, affecting three boys to every girl. Children with ADHD often find school performance requirements a challenge, and may have dysfunctional family and peer relationships, as well as simultaneous developmental and/or psychiatric disorders.

ADHD has gained much exposure among parents and schoolteachers and has become more recently, highly publicized in the media. Many children are labelled "hyperactive" based merely on the personal impression of a parent or a teacher. The diagnosis should be made by a specialist medical doctor, based on specific standardized criteria published in the Diagnostic and Statistical Manual of Mental Disorders (DSM).

With the increasing acceptance of natural and homeopathic therapies, some parents may seek dietary management as a treatment option for children diagnosed with ADHD, instead of pharmacologic agents.

Nutrition and ADHD

Here are some of the facts to assist you in ensuring that the correct dietary interventions are included, together with medical management under the supervision of a medical doctor and/or behaviour therapist.

Common dietary adaptations and ADHD

Because some dietary factors have been suggested as cause for this disorder, various dietary treatments have been promoted; and are discussed in detail below:

Additive-free diet and allergies:

Research studies that have been conducted suggest that some children (including children with and without ADHD) may suffer from sensitivity to specific food additives and could benefit from the elimination of these foods from the diet. A variety of artificial food colourants and sodium benzoate have been implicated.

If a food sensitivity is suspected of causing an extreme physical or behavioural reaction, it is recommended that a food sensitivity assessment be conducted under the supervision of a medical specialist and a dietitian. There is no nutritional risk from restricting some of these foods from the diet (e.g. sweetened beverages and foods high in refined sugars) as intake of these foods can displace preferable food options that have a higher nutrient density. The idea that hyperactivity in children can result from sensitivity to specific foods overlap with existing conceptions of food allergies. Several investigators have broadened this theory to restrict not only food additives and dyes, but also sugars, dairy products, wheat, corn, nuts, eggs, chocolate and other foods that commonly cause allergic reactions in children. Clinically, ADHD, dyslexia and autism are often associated with physical health conditions involving overt immune system dysfunction, such as increased proneness to infections, atopic conditions such as asthma, eczema and hay fever. If parents strongly suspect a specific dietary item, a trial of elimination may be warranted.

Sugar elimination:

A summary of many clinical studies found no effect of sugar on the behaviour of children who are hyperactive or children diagnosed with ADHD. Eliminating sugar (sucrose) from the diet of children with ADHD is therefore not a recommended management strategy. However, added sugar offers no nutritional benefit in the diet and can take the place of nutrient dense foods in the diet. When choosing which carbohydrates to eat, make unrefined whole grain, high fibre starches, fresh fruits and vegetables the basis of most meals. No more than 5% of daily intake should be in the form of free/ added sugars (eg. sugar, juice/ coldrink, sweets, chocolates, biscuits etc). Unrefined whole grain starches, fruits and vegetables contain more nutrients and fibre which nourishes the body and helps to maintain blood sugar control.

Gluten free diet:

No studies were identified that investigated the effects of a gluten-free diet alone on children diagnosed with ADHD and only one analysis conducted in children and adults with celiac disease, describes an improvement in ADHD-like symptoms after at least six months of following a gluten-free diet. Therefore, a gluten-free diet is only indicated for children who have been clinically diagnosed with coeliac disease.

Supplementation and ADHD

Omega-3 fatty acids

Both omega-3 and omega-6 are essential fatty acids (EFA) as they are critical for human health and must be provided by the diet. Dietary intake of omega-3 is very low in many modern developed countries. The key omega-3 fatty acids Eicosapentaenoic acid (EPA) and Docosahexaenoic (DHA) are found in fatty fish, and ALA is found in green vegetables and some nuts and seeds such as flaxseeds, chia seeds, walnuts and canola oil. DHA is important for the development of the brain, eyes and nerves especially in children under the age of two. By contrast, omega-6 fats are usually abundant in Western-type diets. Dietary sources include most vegetable and seed oils (as well as whole nuts, seeds and grains), meat, eggs and dairy produce.

The dietary ratio of omega-6 to omega-3 far exceeds acceptable ratios and this has been linked with an increase in a wide range of both physical and mental disorders. There are some studies that indicate that children with ADHD have lower blood levels of essential fatty acids (EFA). However, clinical trials using omega supplements for treating children with ADHD have yielded mixed results. More studies are needed before a recommendation on supplementation is warranted. However, children with ADHD should follow healthy eating guidelines, including eating at least two servings of fatty fish each week and/or consuming omega-3-fortified foods.

Iron, zinc and magnesium

It has been found that children with ADHD have lower blood levels of iron (liver, legumes, red meat, pumpkin seeds and dried apricots), zinc (red meat, chicken, liver, pumpkin seeds) and magnesium (green leafy vegetables, nuts, fish, grains, pumpkin seeds, legumes). Although supplementation is not routinely recommended in these children, it is important to check their mineral status and adjust the diet by offering foods that are high in these minerals or supplement accordingly.

Side effects of ADHD medication

Many medications prescribed for ADHD are described as stimulant medications and some known side effects are decreased appetite and/or stomach pain. Your dietitian will regularly monitor his/ her growth (height and weight) to ensure that he/ she is following the expected growth rates. If your child experiences weight faltering due to loss of appetite, foods that are nutrient and energy dense will be suggested. These foods provide maximum energy in the smallest volume to ensure even if your child does not eat a lot, they will get sufficient energy. For example:

- Adding peanut butter to oats/ porridge
- Adding eggs/ olive oil to hot mashed potatoes/ pasta
- Adding olive oil/ canola oil to vegetables
- Using avo/ hummus/ cream or cottage cheese and sardines/ pilchards and toppings or sandwich fillings

Conclusion

- If you suspect your child has an intolerance/ allergy, discuss this with your dietitian. An elimination diet might be warranted.
- There is no need to eliminate sugar from your child's diet, however avoid excessive amounts of sugary and processed foods as this will displace more nutrient dense options.
- Unless your child has Coeliac's disease or is gluten intolerant there is no need to exclude gluten from his/ her diet.
- Include fatty fish in your child's diet at least twice a week.
- Check for an iron, zinc and magnesium deficiency- correct if necessary.
- Have regular growth monitoring to ensure your child is growing well, offer energy and nutrient dense foods if there is weight faltering.