



## Adolescents - Brain food: fish oils – omega-3 fatty acids

Two long-chain polyunsaturated fatty acids displaying activity as 'brain food' have been identified in fish oils, namely eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Both these omega-3 oils have shown that they can improve brain function, vision, and that they display a protective action towards the heart, reducing the incidence of heart

attacks and strokes. More recently, studies have indicated that these oils can reduce the incidence of Alzheimer's disease, and improve the quality of life and memory of those affected by dementia.

The most direct way of supplying the body with DHA and EPA, is by direct consumption, as the human body is limited in its ability to metabolise linolenic acid, found in foods like walnuts and canola oil, to DHA and EPA. EPA and DHA are absorbed in the gastrointestinal tract and transported to the liver. EPA and DHA are then incorporated into the cell membrane phospholipids throughout the body, particularly in the heart and brain.

DHA, in particular, provides the neurological benefits obtained from consuming these omega-3 oils, playing a role in the ongoing structure and function of the brain. By incorporating DHA into the cell membranes in the brain, the

fluidity of the cell membranes is affected, including functions like permeability and protein activity. It also provides a protective function, making cells less susceptible to lipid peroxidation and oxidative stress.

Healthy levels of neurotransmitters in the brain are also supported by the intake of DHA. The brain requires these neurotransmitters to perform functions like memory and concentration, DHA assisting in the release of these transmitters. Persons who have displayed DHA deficiencies have also shown lower levels of dopamine and dopamine receptors in the frontal lobe of the brain, resulting in an inability to concentrate and anxiety. It is suggested that DHA intake can therefore promote focused attention and calm anxiety.

The recommended daily intake of DHA is 240 to 1000 mg daily to protect cognitive and neurological health.

## Women's health - Incontinence

What exactly is incontinence and why does it occur? Normally, urine is produced by the kidneys and passes through to the bladder. The tube connected to the bladder that leads the urine to exit the body, is called the urethra. Surrounding the urethra is a ring of muscles called the urinary sphincter. These muscles contract as the bladder is filling up, and relaxes when it is time for a person to void the contents of the bladder.

Incontinence is the term used to describe the involuntary leakage of urine. It can be very distressing and embarrassing for a patient and many women may just put up with it, thinking it is most likely the result of advancing age. In order to give the best advice to the patient who does ask for help, it is important to note that more than one type of incontinence has been identified.

### Overflow incontinence

This type of incontinence is very uncommon in women (it mainly affects men, due to enlargement of the prostate – the gland surrounding the urethra). The bladder fails to empty completely, causing an amount of urine to stay behind in the

bladder. This can cause a person to urinate more frequently.

### Incontinence caused by medical conditions

Most of the conditions that can lead to incontinence are treatable. Patients need to be referred in order to get the primary condition treated, resolving incontinence automatically in the process. Examples of conditions that could lead to incontinence include urinary tract infections, uncontrolled diabetes, arthritis, hypercalcaemia, and atrophic vaginitis.

### Urge incontinence

Patients who experience urge incontinence experience a sudden, strong, uncomfortable need to urinate, followed by leaking of urine. Urge incontinence occurs more often as people begin to age. Various foods and beverages can aggravate urge incontinence, and patients should refrain from consuming too many caffeinated beverages and spicy foods. Drinking excessive amounts of liquids should also be avoided. There are several prescription medicines approved for the treatment of urge incontinence.

### Stress incontinence

This type of incontinence occurs as a result of inability of the sphincter muscles to remain closed as pressure increases. The pressure in the abdomen can increase during sneezing, laughing, coughing or even running. Stress incontinence is the most common cause of urinary incontinence in younger women.

Patients with urge and stress incontinence should be encouraged to do pelvic muscle exercises, also known as Kegel exercises. These exercises can assist in strengthening the muscles involved in closing the sphincter muscles. To do these exercises correctly, the right group of muscle should be identified. Try to imagine sitting on a marble. Imagine using the vaginal muscles to lift the marble gently.

These muscles should then be contracted for ten seconds, thereafter slowly relaxing the muscles. Perform 8 to 12 contractions followed by relaxation three times. Do this at least three to four times per week. Gradually, the patient will be able to hold the contraction harder and for longer.

