



Living with Stress

Choices to help your
Boarding School Life.

STRESS:

Stress is defined as an organism's total response to environmental demands or pressures. Can be a normal response, or more commonly a negative response.

AIM:

TO highlight physiological processes that occur as a result of stress, and how we can manage them to achieve optimum health.



Habits that can REDUCE brain power and concentration include:

- Missing meals. Being hungry makes it hard to MEMORISE and think through problems. [BSL](#), [Cortisol](#)
- ALWAYS eat breakfast : [BSL](#), [Cortisol](#)
- Eating poorly. This will affect your ability to sleep well and fight colds and flus: [Immune system response](#), [electrolyte imbalance](#).
- Not drinking enough water: [Dehydration](#), [Fluids and Electrolytes](#).
- Drinking lots of energy drinks and caffeine - causes irritability and insomnia: [Cortisol](#), [Adrenaline](#)
- Poor sleep habits: [Cortisol](#) and [Adrenaline](#)

Stress Hormones:

Cortisol

- Produced by Adrenal gland.
- Increases availability of **Glucose** in bloodstream and to brain
- Enhances cell repair.
- Levels peak at around 8am, lowest between 12midnight -4am.



Stress Hormones

Cortisol: Negative impacts

- Prolonged high levels cause lowered immune response (decreased resistance to viral illness);
- Impaired cognitive function (memory reduced, anxiety states);
- increased gastric acid secretion; changes in appetite; muscle breakdown and inflammatory skin reactions (pimples).
- ?? Adrenal fatigue and chronic fatigue syndrome

Women are different, and special!

- <http://youtu.be/KELFWgX-uag>
- High levels caused by stress, high caffeine intake, dietary impacts, poor sleep patterns.

Stress Hormones:

Adrenaline

- Fight –or –Flight syndrome
- Increases heart rate
- Increases Blood pressure
- Energy surge – availability of **glucose** to cells

Caffeine acts to increase adrenaline release, increases metabolism, adds to insomnia

THERE ARE ONLY
TWO TIMES
I FEEL STRESS:



DAY AND NIGHT.

Blood Sugar Levels

- **Glucose** is primary source of energy for all cells
- Usually increases as a result of stress hormone production
- Low BSL can act to increase stress response
- Hypoglycaemia: lethargy; irritability; twitching; mental impairment; coma

Common Nutrient??

- Glucose
- Only fuel normally used by brain, can't store glucose so needs constant supply.
- Easiest bio-available form??

- CARBOHYDRATES : 50% OF DIETARY INTAKE

- Glucose - simple sugars
- Fructose - fruit
- Galactose – Milk/dairy products.

Counteractions: Repair responses

- Nutritional input
- Regular sleep patterns to maintain diurnal and circadian rhythms: milk before bed
- Regular exercise without extremes
- Relaxation: massage, meditation, music, warm baths
- Deep breathing exercises
- LAUGH, SMILE, take time to have fun.



“Exercise: you don't have time not to”

Scenario

- Late nights doing assignments
- Poor diet – not eating, sugar or caffeine overload
- No exercise or relaxation activity – too busy
- Argument because tired and irritable
- 8am Exam

Serotonin (precursor tryptophan)

- Neurotransmitter that has a calming effect on brain.
- Synthesized and stored in brain
- Regulates mood, emotions, sleep, appetite, memory.
- Research suggests levels are increased meditation (thought processes), by higher light levels (sunlight), by exercise, debate about dietary availability.
- Only milk has higher proportion of amino acids that enable some to cross the blood brain barrier and thus effect mood.

Endorphins

- Released from the Pituitary Gland as result of stress and pain. (Morphine/codeine)
- Act to reduce pain, induce feelings of euphoria, modulate appetite, enhance the immune system.
- Reduces effects of stress.
- Prolonged Exercise
- Chocolate and chillies.
- Acupuncture, massage and meditation.

Hydration

- Dehydration is most common cause of headaches during or after exams or sports.
- Effects electrolyte levels: Potassium, sodium, chlorine
- Muscle contraction, spasms: extreme imbalances can cause heart muscle injury.

Iron

- Deficiencies common in teenage girls due to hormonal changes.
- Low stored iron first affects energy levels , wound healing, Immunity. Late effects include shortness of breath, chest pain, heart murmur.
- High iron foods – red meat, oily fish-sardines, some nuts, green vegetables.



Questions??

Thank-you for sparing your time