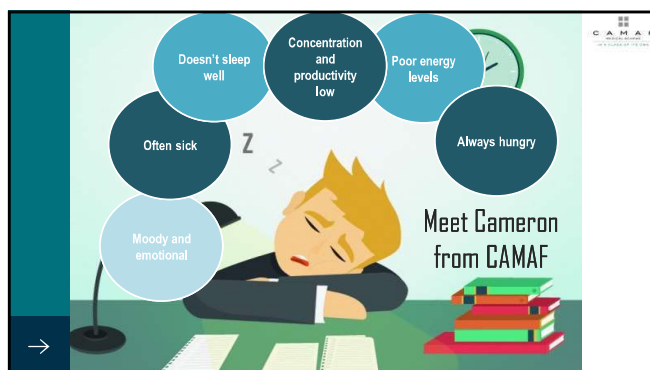
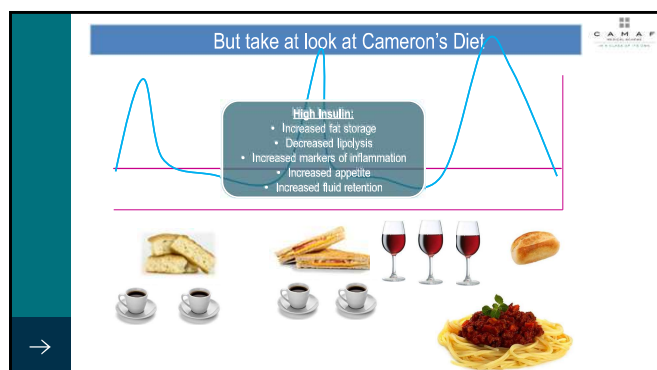




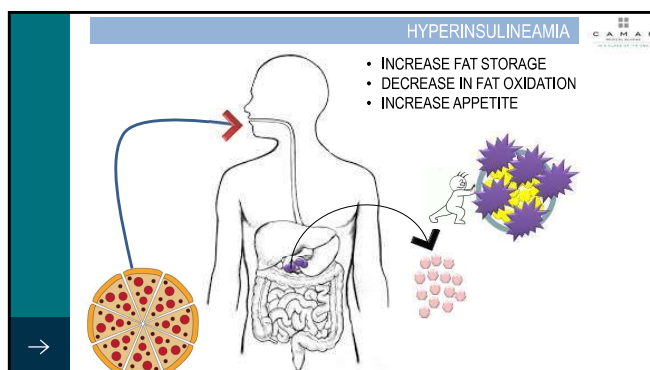
1



2



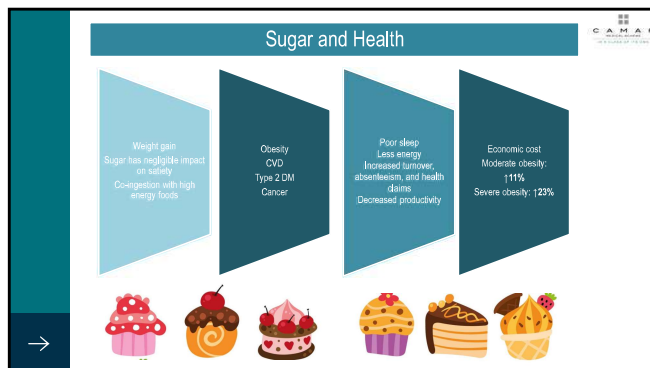
3



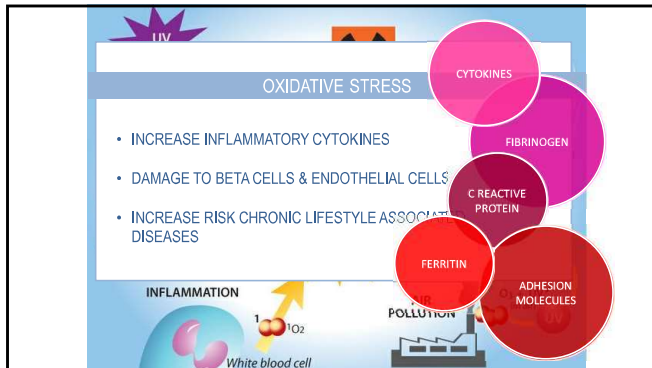
4



5



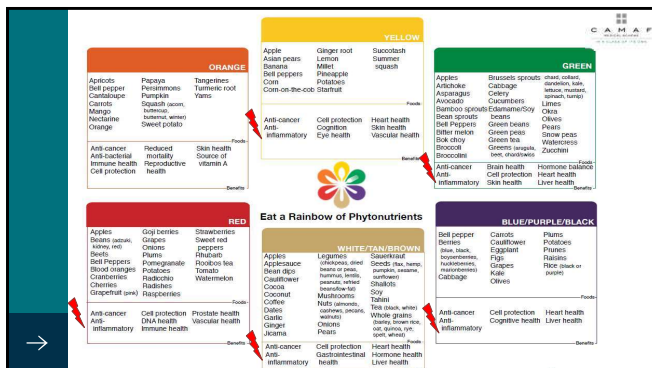
6



7



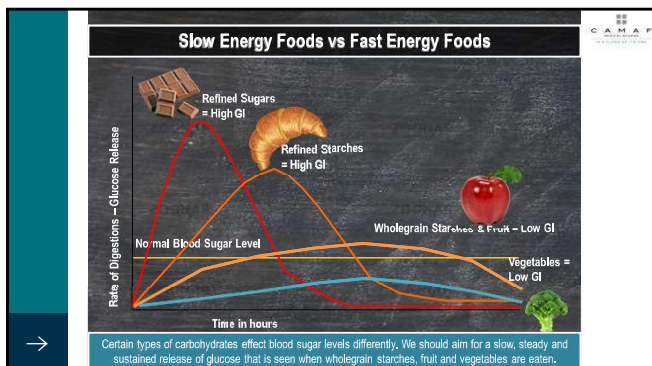
8



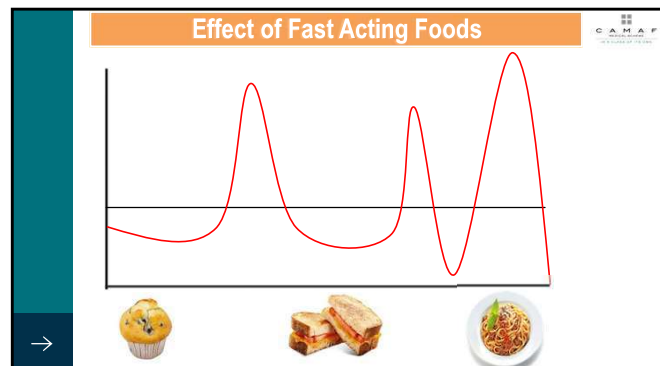
9



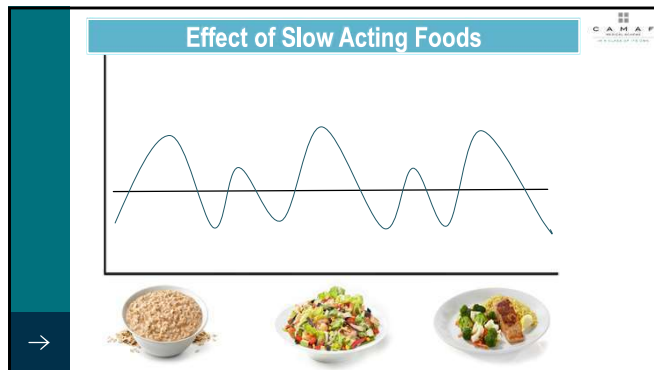
10



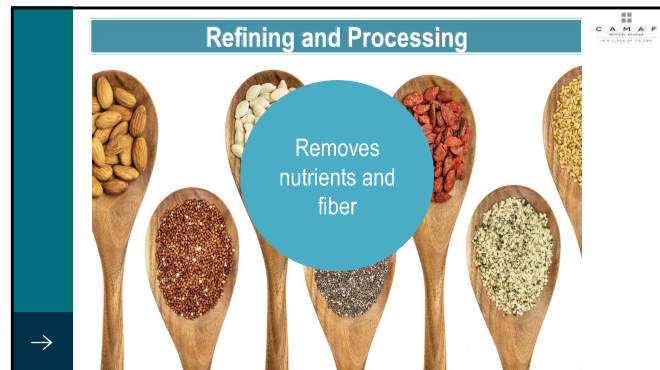
11



12



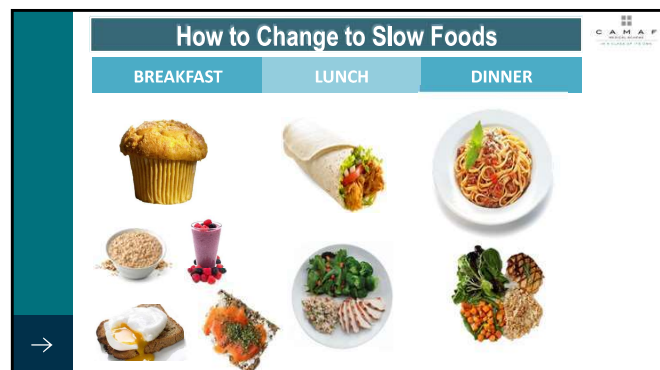
13



14



15



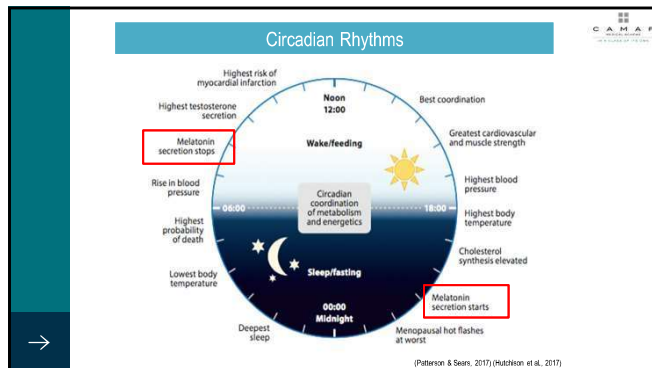
16



17



18



19

- Melatonin and cortisol work together
- A disturb sleep cycle disrupt this **balance**
- Not enough melatonin:
 - ✓ Screen time (bright light)
 - ✓ Electronics before bed
 - ✓ Increased stress in your life
 - ✓ Not being physically active
 - ✓ Sleeping routine – Different sleep patterns, changing all the time
- Increased Cortisol levels → PROBLEM
 - ✓ Wellbeing affected
 - ✓ Suppress immunity & inflammation
 - ✓ Prolonged sleep disruption = adrenal stress & fatigue
- Sustained sleep restriction has been associated with an inflammatory state and an elevation in inflammatory markers (TNF- α , IL-2 and IL-4)

Grandner MA, Knapik DF, Naidoo N, et al. (2016) Relationships among dietary nutrients and subjective sleep, objective sleep, and cognition in women. *Sleep Med* 15(2):105-114.

20

A recent study manipulated the diet of 44 adults for 4 days. Diets were:

- **high protein** (56 % protein, 22 % carbohydrate, 22 % fat);
- **high carbohydrate** (22 % protein, 56 % carbohydrate, 22 % fat);
- **high fat** (22 % protein, 22 % carbohydrate, 56 % fat).

Diets higher in carbohydrate resulted in shorter time to sleep

Diets higher in protein resulted in fewer episodes of waking

Lindahl G, Lindahl P, Thompson M. (2013) Nutritional effects on sleep. *West J Nutr Res* 35:607-613.

21

Another study examined the dietary intake of 459 postmenopausal women over 7 days.

Increased fat intake was associated with reduced total sleep time

Grandner MA, Knapik DF, Naidoo N, et al. (2016) Relationships among dietary nutrients and subjective sleep, objective sleep, and cognition in women. *Sleep Med* 15(2):105-114.

22

Portion controlled of quality carbohydrates promote sleep & should be consumed more than 1 hour before bedtime

The hormone melatonin and foods that have a high melatonin concentration may decrease sleep onset time

When total energy intake is drastically decreased below BMR sleep quality may be disturbed

Small doses of tryptophan (1 g) may improve both ability to fall asleep and sleep quality

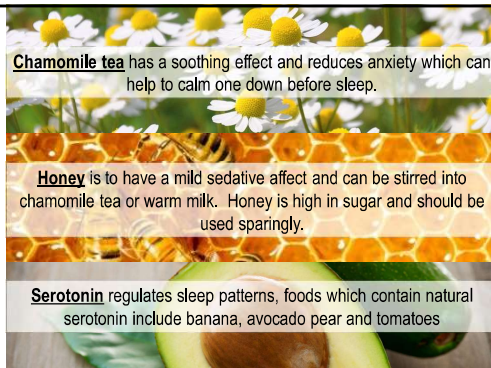
Hoban SL. (2014) Sleep in Elite Athletes and Nutritional Interventions. In: *Enhance Sleep*. Sports Med 44 (Suppl 1):S23-S25.

23

How much is 1g of tryptophan?

- 200g Soya
- 200g Lean Protein
- 200g Ricotta Cheese
- 300g Fish

24

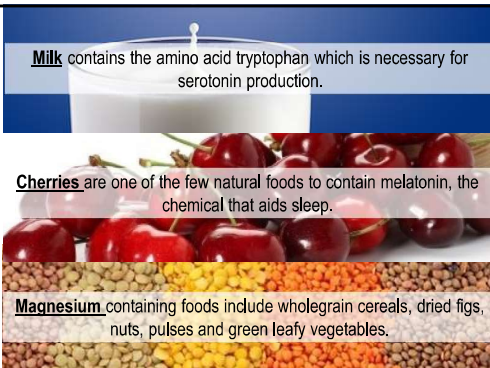


Chamomile tea has a soothing effect and reduces anxiety which can help to calm one down before sleep.

Honey is to have a mild sedative affect and can be stirred into chamomile tea or warm milk. Honey is high in sugar and should be used sparingly.

Serotonin regulates sleep patterns, foods which contain natural serotonin include banana, avocado pear and tomatoes

25



Milk contains the amino acid tryptophan which is necessary for serotonin production.

Cherries are one of the few natural foods to contain melatonin, the chemical that aids sleep.

Magnesium containing foods include wholegrain cereals, dried figs, nuts, pulses and green leafy vegetables.

26

Sleep Like a Baby

- **Black out:** Light affects levels of the hormone melatonin which plays a role in sleep. Remove all unnecessary electronics. Keep the dock light off or dimmed. Get blackout shades for the windows.
- **Unplug:** Stop using stimulating electronics including TV's, phones, and tablets at least 1 hour prior to shuteye.
- **Calm down and calm your senses.** Take a hot shower or bath before bed to help relax you. Put in place other relaxing strategies such as downloading apps like Headspace or having a warming cup of herbal tea.
- **Quiet time:** Use ear plugs if your partner snores or other noises are affecting your ability to sleep.
- **Timing is everything:** Go to bed at the same time.
- **Adjust the Temperature**
- **Time for a new mattress or pillow?**
- **Don't forget the protein**

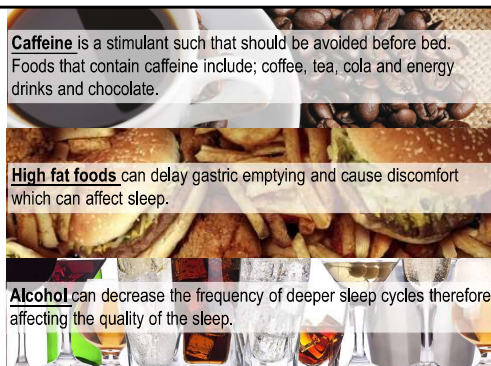


27

Foods to Avoid for Sleep



28



Caffeine is a stimulant such that should be avoided before bed. Foods that contain caffeine include; coffee, tea, cola and energy drinks and chocolate.

High fat foods can delay gastric emptying and cause discomfort which can affect sleep.

Alcohol can decrease the frequency of deeper sleep cycles therefore affecting the quality of the sleep.

29



This is Cameron today!

30

