Today's good mood is sponsored by running!

RunDeanRun.ca

- Coaching recreational runners
  - New to running
  - Returning to running (injured)
  - Wanting to qualify for Boston
  - Wanting to finish a 100 miler
- Certified:
  - National Coaching Certification Program
  - Lydiard Coaching
  - Functional Movement Screening
- Former ski instructor for the disabled (25 years)
- Former youth football coach (25 years)

National Coaching Certification Program

Functional Movement Screen FMS CERTIFIED

Lydiard Foundation Level I & II Certified

Dean's Methods and Principles

- "Coaching to Independence"
- Adapting proven science
- Adapting proven training methodologies
- Adapting to a runner's life and schedule
- Aligning with a runner's goal
  - What do you want?
  - What will you give?

Fueling & Hydration for Endurance Training & Racing

Dean Johnson

Personal Running Coach

“If you are not drinking, you are not eating.
If you are not eating, you are quitting”
~CTS Head Coach: Jason Koop

The Simple Plan

- 500ml to 1000ml H_2O/hour
- 350mg to 700mg Sodium/litre
  - 70% factor of mg(NA)-ml (H2O)
- 240 to 260 calories/hour

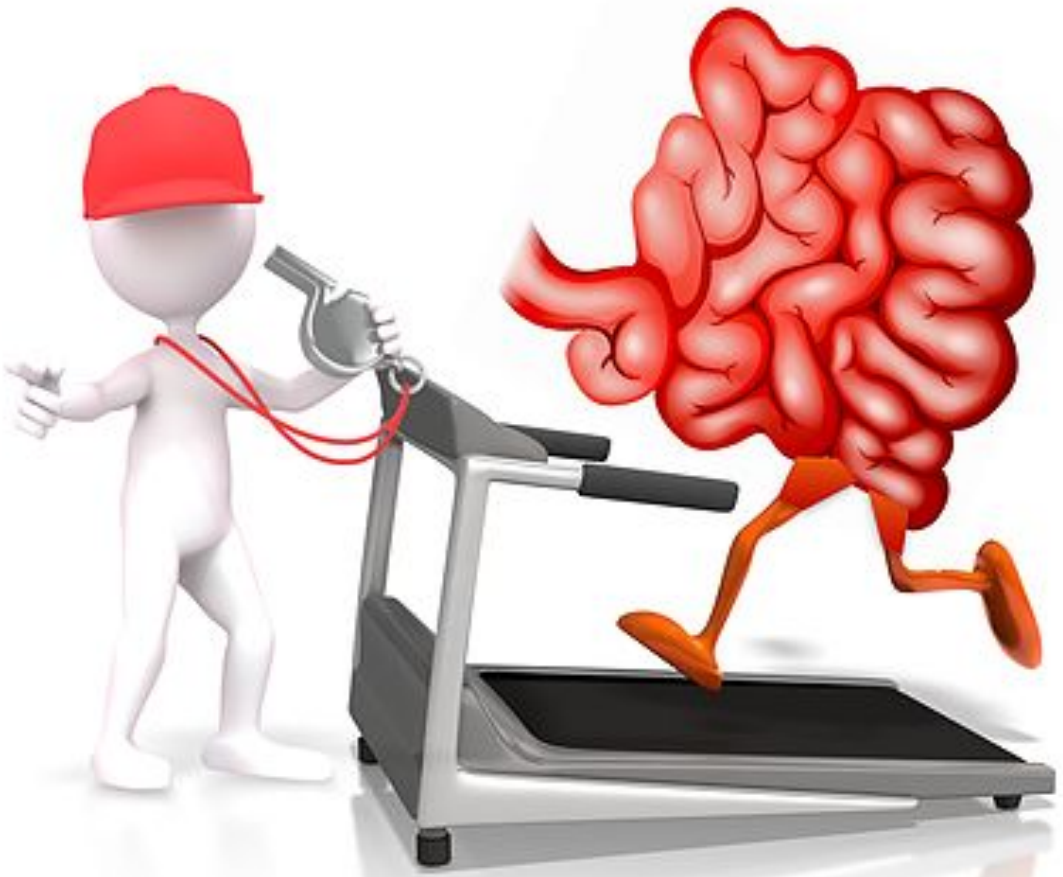
Priorities

- #1 Hydration (with Sodium)
  - The gut needs water to processing carbs 4:1
  - Sodium regulates water in, and around cells
  - Low Sodium = swelling hands and feet
- #2 Fueling
  - Start with full carb stores
  - Might need to slow down or stop to allow blood to return to the stomach to process

Fuel: Carbs, Sugar, Maltodextrin, Fructose

- Burn rate ~100 calories/mile x 26 miles = 2600 cal
- You have 1500-2000 calories stored = 600 to 1000 cal deficit
- Maltodextrin has fast absorption and requires less water
- Fructose use separate pathway, beware fructose intollerance
- Training habitually on low energy stores will have the body cannibalize muscles for proteins and amino acids as fuel
- *Training in a low glycogen state can improve aerobic efficiency
- LCHF diets are complex with significant risks (not for us…)
  - max benefits of about 50 cal/mile

Training the gut



mysportscience
Unlock the Power of Science to Optimise Performance

@jeukendrup

www.mysportscience.com

1. Improved gastric emptying
2. Improved intestinal absorption
3. Improved stomach comfort
4. Reduction of GI problems

The gut is extremely adaptable

Jeukendrup Training the gut for athletes Sports Medicine 2017

http://www.mysportscience.com/single-post/2017/03/25/Training-the-gut-for-athletes

Various methods of "Training the gut" and their effects

mysportscience
Unlock the Power of Science to Optimise Performance
@jeukendrup
www.mysportscience.com

Methods

- Training with relatively large volumes of fluid to "train the stomach"
- Training immediately after a meal
- Training with relatively high carbohydrate intake during exercise
- Simulate the race with a race nutrition plan
- Increased carbohydrate content of the diet

Physiological effect

- Reduced bloating and fullness during exercise
- Increased gastric emptying
- Increased capacity to absorb carbohydrate
- Increased delivery of carbohydrate

Benefit

- Reduced gastro-intestinal symptoms
- Improved performance

http://www.mysportscience.com/single-post/2017/03/25/Training-the-gut-for-athletes

Supplements

Product	Calories	Sodium	Protein	Fat
Hammer Heed Hydrate	100 (500ml)	40 mg	-	-
eLoad Hydrate	100 (500ml)	370 mg	-	-
Hammer Perpetuem	270 (500-1000ml)	210 mg	7 g	2.5 g
Gels	100 each	30-125 mg	0 - 1g	-
Chews	10-20 each	5-10 mg each	0 - 1g	-
Waffle	150 each	75 mg	1 g	6 g
Endurolytes	-	80 - 200mg	-	-
Table Salt (⅛ tsp “pinch”)		280 mg		
Sugar (tsp)	64			
Coke/Pepsi (250ml)	100	30 mg		
Chips (1 chip)	10	10 mg	0.1 g	0.7 g

Tactics

- (1) 500ml Heed drink
  - 100 calories + 40mg Sodium
- (1) Gel
  - 100 calories + 125mg Sodium
- =200 cal, 165mg Sodium
- Need ~200mg Sodium

Tactics

- (1) 500ml eLoad
  - 100 calories + 370mg Sodium
- (1) Honey Stingers plackage
  - 160 calories + 40mg Sodium
- =260 cal, 410mg Sodium
- *watch the sodium content

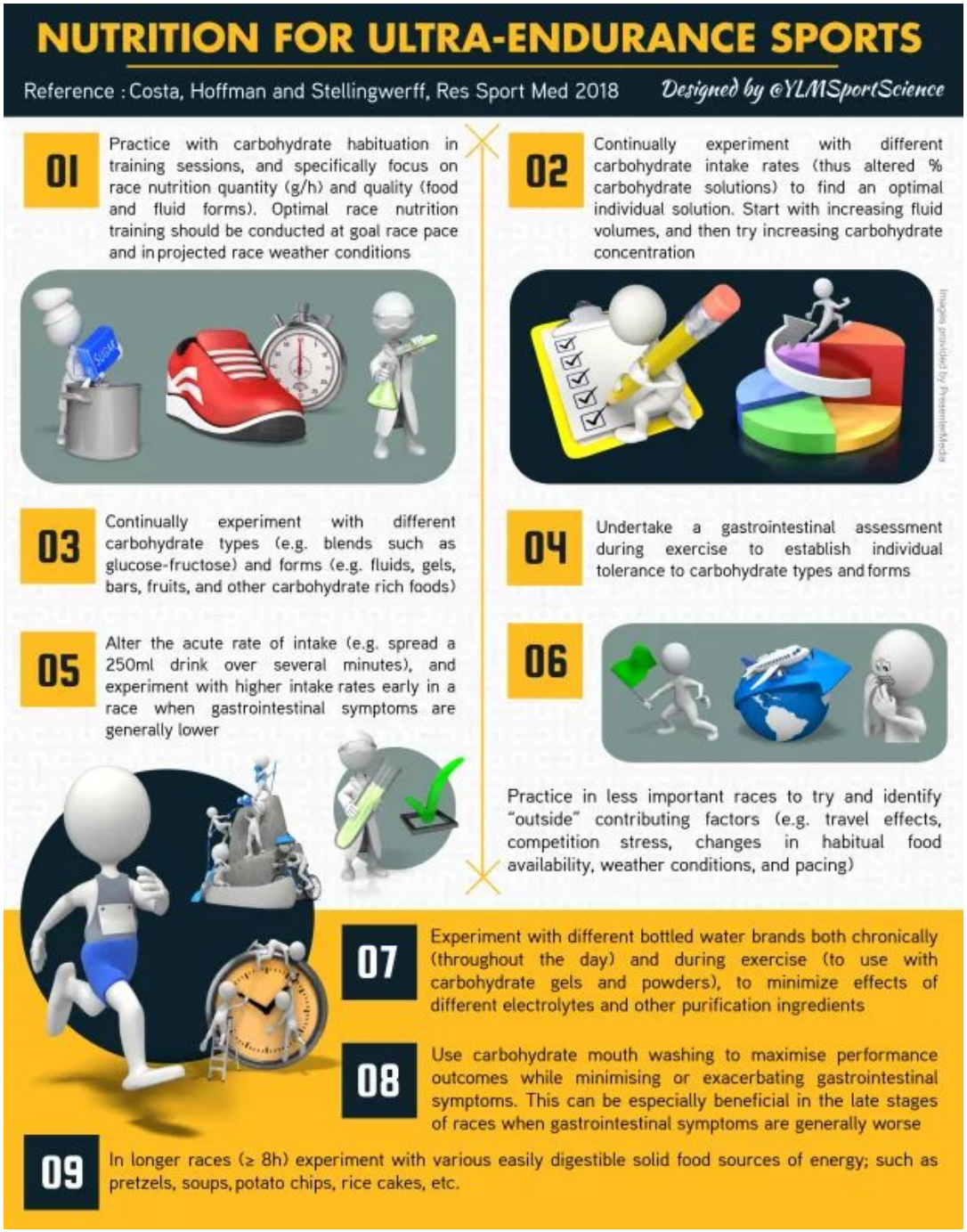
Tactics (hot day)

- (2) 500ml eLoad
  - 200 calories + 2x370mg Sodium
- (1piece) Shot Bloks
  - 30calories + 20mg Sodium
- =230 cal, 760mg Sodium/1L

Race Plan

Mile/Km (aid station)	Time	Water nuun	Sport Drink	Food	Na	Cals tot
15 min pre	**-15:00**	**100ml**	**0**	**gel (100cal)**		**100**
2/3	**20:00**	**250ml**				
4/6.5	**40:00**	**250**		**gel (100cal)**		**200**
6/10	**1:00:00**	**250**		**chew (50cal)**		**250**
8/13	**1:20:00**	**250**		**gel (100cal)**		**350**
10/16	**1:40:00**	**250**		**chew (50cal)**		**400**
12/20	**2:00:00**	**250**		**gel (100cal)**		**500**
13/21	**2:10:00**					

- Use carbs in training
- Experiment
  - Types/Rates
- Heat is a factor
- Carb mouth rinse late in the race
- Ultra events - test real foods



High FODMAP foods and alternatives

mysportscience
Unlock the Power of Science to Optimise Performance
@jeukendrup
www.mysportscience.com

High fructose
Apples, cherries, watermelon

Blueberries, pineapple, honey dew melon

Fructans / Galacto-oligosaccharides (GOS)
Dates, honey, wheat based breads and bars

Dried kiwi, maple syrup, wheat free bars

Lactose
Milk, yogurt, cheese

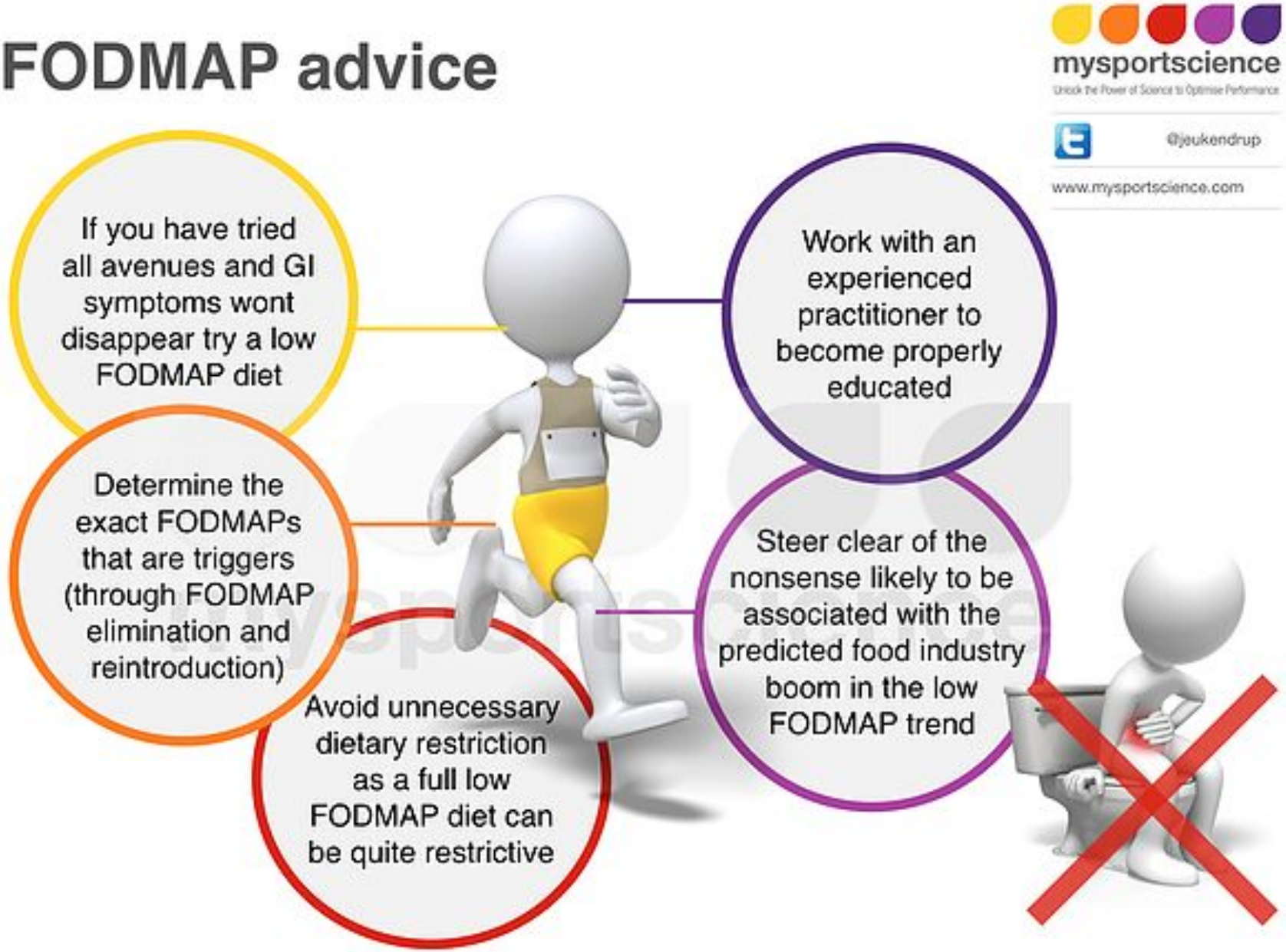
Lactose free milk, lactose free yogurt

High polyols
Sorbitol

Brown sugar, maple syrup, stevia

Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols.
These are complex names for a collection of molecules found in food, that can be poorly absorbed by some people.
http://www.mysportscience.com/single-post/2017/09/22/Low-FODMAP-A-novel-tool-prevent-GI-problems

FODMAP advice



http://www.mysportscience.com/single-post/2017/09/22/Low-FODMAP-A-novel-tool-prevent-GI-problems

Links

- My Sports Science: Asker Jeukendrup:
  http://www.mysportscience.com/
- IOC sports nutrition:
  https://www.youtube.com/channel/UCRvNgO9CU5NMWjrz9ijb-UQ/videos
- Protein:
  http://www.mysportscience.com/single-post/2017/10/18/Dietary-protein-requirements-for-older-athletes

RunDeanRun.ca

- Personalized Coaching (full)
- Personalized Training Plans
- Guided workouts
- Running form analysis/coaching

- RunDean@Gmail.com (email Dean)
- Tweet: @RunDean