

## Concussion/PCS Protocol

- ☒ Post Concussion Nutritional Guideline
- ☒ High Dose Fish Oil - 3x Dose  
(EPA 1500 : DHA 500)
- ☒ Vitamin B1 - 2x Dose
- ☒ Vitamin D3 - 2x Dose
- ☒ Black Berries / Blue Berries - Antioxidants

**\*In case of high performance athlete:**

- ☐ BCAAs
- ☐ Glutamine
- ☐ Whey Protein
- ☐ Creatine

**Extensive Counseling**

- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_

**5 treatments of ICS under the supervision of Dr. Jha**

*Each case reviewed prior and following treatment  
by Dr. Jha*

Headache  
Irritability  
Mood

- |                          |       |       |
|--------------------------|-------|-------|
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**Serial Neurocognitive Testing**

- |                                     |                      |
|-------------------------------------|----------------------|
| <input type="checkbox"/>            | _____                |
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| <input type="checkbox"/>            | _____                |
| <input checked="" type="checkbox"/> | Meditation           |
| <input checked="" type="checkbox"/> | Cognitive Activities |



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### 1. Consume a healthy, balanced diet

Your body and brain need calories for energy and to function properly. Consuming adequate calories and protein within the first 24 hours after injury and throughout recovery is important. Focus on healthy, natural foods including: lean cuts of meat, white skinless poultry, fish, nuts and seeds, beans and lentils, low fat milk and milk alternatives, whole grains, fruits, vegetables, and healthy fats and oils.

### 2. Eat regularly

Aim to eat every 3 – 4 hours to help keep your energy levels up and your blood sugar stable. Aim for 3 small meals and 3 snacks a day. Try to eat the same amount at the same time day to day. If you find it difficult to remember to eat, set a timer or your watch or phone alarm to help keep you on a regular eating schedule. Avoid overeating as it could cause you to feel sleepy.

### 3. Include protein at every meal and snack

Protein helps you build and repair tissues and plays an important role in immune function. Include a protein source at every meal and snack and combine it with healthy sources of carbohydrates and fats. Healthy protein sources include poultry, fish, lean meats, nuts, seeds, beans, lentils, eggs, milk, yogurt and low fat cheese. Healthy carbohydrate choices include whole grains such as whole grain bread, pasta and rice and fruits and vegetables. Healthy fats and oils can be found in fatty fish, avocados, nuts and seeds, nuts and seed butters and oils such as olive, canola and soybean oil.

### 4. Eat an antioxidant-rich diet

Antioxidants are substances or nutrients found in foods that can prevent or slow oxidative damage and the stress caused by injury. Antioxidants include vitamins C, E, and beta-carotene; the minerals selenium and zinc and other beneficial compounds called flavonoids and polyphenols. It is recommended to include a variety of foods rich in antioxidants.

- **Vitamin A and Carotenoids:** carrots, broccoli, squash, sweet potatoes, yams, tomatoes, kale, collards, cantaloupe, peaches and apricots
- **Vitamin C:** citrus fruits (oranges, lemons, limes), red and green peppers, broccoli, green leafy vegetables, strawberries and tomatoes
- **Vitamin E:** nuts & seeds, whole grains, green leafy vegetables, and vegetable oils
- **Selenium:** fish & shellfish, lean red meat, whole grains, eggs, chicken and garlic
- **Flavonoids / polyphenols:** skin of red grapes, peanuts, berries, pomegranate, cranberries, soy
- **Curcumin:** turmeric (spice)
- **Zinc:** meat, poultry, seafood, eggs, milk products, whole grains, fortified cereal, and legumes

## 5. Consume omega – 3 fatty acids

Omega-3 fatty acids can counteract oxidative damage to brain cells and may help improve nerve signal transmission at synapses. Omega-3s are found in ground flaxseed, walnuts, pumpkin seeds, and fatty fish (salmon, trout, sardines, and herring).

Aim for 2-3 servings of fatty fish per week (1 serving = 3 ounces). Women who are pregnant or breastfeeding or could become pregnant and children should limit fish to 12 ounces a week and avoid large fish such as shark, swordfish, king mackerel, and tilefish. You can learn more at:

[http://www.toronto.ca/health/fishandmercury/pdf/guide\\_eat\\_fish.pdf](http://www.toronto.ca/health/fishandmercury/pdf/guide_eat_fish.pdf)

## 6. Stay Hydrated

Stay well hydrated and focus on water versus pop, juice and other sweetened beverages. Dehydration may worsen post-concussion headaches.

## 7. Limit sweets and processed foods

Natural foods such as fresh meats, fruits, vegetables and whole grains are superior to most processed foods for delivering nutrients and aiding in recovery after an injury. Processed foods are often high in sodium, sugar, and fat and lower in nutrients.

Examples include: chips, pretzels, cookies, candy, chocolate and many packaged and canned foods.

## 8. Avoid fatty and spicy foods

Fatty, acidic and spicy foods could worsen feelings of nausea. Stick with bland foods including: bread, pasta, and rice; vegetables (except tomatoes), fruit (except citrus) low fat milk and yogurt, lean cuts of meat (chicken breast, pork tenderloin, fish), beans, lentils, and nut and seed butters. Limit sauces, spreads, dips, fats and oils.

## 9. Avoid Alcohol

Do not drink alcoholic beverages until your health care professional says you are well enough. Alcohol and other drugs may slow your recovery and put you at risk of further injury.

## Sample 1 – Day Diet

### Breakfast:

- 2 eggs
- 2 slices whole grain toast with 1 tsp. margarine
- 1 cup mixed berries
- $\frac{3}{4}$  cup yogurt with 1 tbsp. flaxseed

### Morning Snack:

- 1 orange,  $\frac{1}{4}$  cup almonds

### Lunch:

- 3 oz. sliced chicken
- 1 whole grain wrap with sliced lettuce, tomato, cucumber & 1 tbsp. hummus
- 2 cups spinach salad with strawberries and 1 tbsp. walnuts + 1 tbsp. salad dressing
- 1 cup skim milk

### Afternoon Snack:

- 10 small whole grain crackers, 30 g skim milk mozzarella

### Dinner:

- 5 oz. salmon
- 1 cup quinoa
- 2 cups roasted vegetables (peppers, zucchini, onion, carrots)
- 1 tbsp. canola oil for cooking

### Evening Snack:

- 1 cup whole grain cereal, 1 cup almond milk

## References:

Brain Trauma Foundation: <https://www.braintrauma.org/>

American Dietitian Association: <http://www.eatright.org/>

Institute of Medicine: <http://www.iom.edu/>

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