



## February 2013 - Supporting the Immune System

### *COPPER*

- Vital in the development and maintenance of immune system function.
- In a study of 11 malnourished infants who had copper deficiencies, copper supplements were given and the ability of certain white blood cells to engulf pathogens increased significantly after 1 month of copper supplementation.
- Copper can be found in various organ meats - especially liver. It can also be found in shellfish, nuts, seeds, wheat bran, cereals and whole grain products.

### *SELENIUM*

- It is associated with impaired function of the immune system.
- A study on healthy and immunosuppressed people who were supplemented with sodium selenite for 8 weeks, showed an enhanced immune cell response to foreign antigens compared to those taking a placebo.
- Selenium can be found in brazil nuts, shrimp, crab meat, salmon, halibut and brown rice.

### *VITAMIN A*

- Children who are mildly deficient in Vitamin A have a higher risk of respiratory disease, diarrhoea and mortality from infectious disease compared to children who are sufficient.
- Vitamin A supplementation decreases severity and



### FOOD SCIENCE

#### Foods that boost the immune system

Yoghurt - the probiotics (live active cultures) in yoghurt are healthy bacteria that help keep the gut and intestinal tract free of disease causing germs



Oats/barley - contain beta glucan which is a fibre with antimicrobial and antioxidant capabilities. This boosts immunity and speeds wound healing

Garlic - contains allicin which fights bacteria and infection

Fish - selenium in shellfish in particular helps white

incidence of deaths related to diarrhoea and measles in developing countries where deficiency is common.

- The vitamin can be found in cod liver oil, fortified breakfast cereals, eggs, butter and sweet potatoes.

### **VITAMIN E**

- It is vital in the formation of antibodies.
- Lowers the risk of contracting upper respiratory tract infections, especially the common cold however has no effect on lung infections.
- Can be found in olive oil, soybean oil, corn oil, carrots and almonds.

### **ZINC**

- Zinc maintains the integrity of the immune system.
- Zinc deficient people have an increased susceptibility to a variety of infectious agents.
- There is also an increased susceptibility to infectious disease in children like diarrhoea, pneumonia and malaria.
- The elderly are vulnerable to zinc deficiency.
- It can be found in oysters, crab meat, beef, pork and milk.

## **Detox Recipes**

### **BREAKFAST**

#### **Berry blast porridge**

Prep and cooking time: 5 mins - Serves: 2 people

Can store in fridge

#### **Ingredients**

100g porridge oats

500ml soya milk or water

A handful of strawberries (quartered)

A handful of raspberries (whole)

100g redcurrants

4 teaspoons of Stevia

blood cells produce proteins that help clear flu viruses out of the body

Tea - contains an amino acid which is responsible for immune boost in black and green tea

Beef - contains zinc which is important for the development of white blood cells

Sweet potatoes - contain vitamin A which helps with the production of connective tissue in the skin

Mushrooms - increase the production of white blood cells

### **CONTACT US**

nutrition@dianawright.co.uk  
01494 722777

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1 orange juice and zest

### Method

- For the compote - Cook pre prepare redcurrants with stevia, fresh orange juice and zest.
- For the porridge - either, combine the oats with the liquid and bring to a boil in a pan and bring to the boil slowly. Or, put in bowl and microwave on high for 1 min 30 secs.
- Stir and divide into 2 bowls. Serve with the compote and add the fresh fruit if required.



### Fruit smoothie

Prep time: 5 mins - Serves: 1 person

### Ingredients

1 banana  
200ml Alpro soya milk light  
1 tbsp ground flax seeds  
100mls coconut water  
A few drops of natural vanilla  
1 tsp of cinnamon  
Honey or stevia  
1 tbsp of protein powder

### Method

- Once blended, sprinkle flaked almonds on top.

### LUNCH



### Goats Cheese Salad

Prep time: 15 mins - Serves: 2

#### Ingredients

50g pumpkin seeds  
50g walnuts  
50g sunflower seeds  
2 tsp soy sauce  
100g mixed salad leaves (washed)  
1 pink grapefruit, peeled & segmented  
1 avocado, peeled and diced  
150g soft goat's cheese  
1 tbsp lemon thyme, chopped  
4 tbsp olive oil  
2 tbsp lemon juice  
Seasoning

#### Method

- Preheat the oven to 180°C/375°F/gas 5.
- Toss together the pumpkin seeds and sunflower seeds with the soy sauce and roast for 15 minutes. When roasted, combine with the muesli for a nutty sprinkle.
- Combine the lemon thyme, olive oil, lemon juice and seasoning.
- To make the salad, divide the salad leaves between each plate. Add the avocado and pink grapefruit and spoon over the nut and seed mix.
- Top with the goat's cheese, crumbled over and drizzle over the dressing.



### Avocado couscous

Prep time: 10 mins - Cooking time: 25 mins - Serves: 6

## Ingredients

2 avocados  
300g couscous  
1 tbsp lemon juice  
1 x 220g can chickpeas - drained  
1 red pepper, finely chopped  
1 pomegranate  
4 tbsp orange juice  
2 tbsp virgin olive oil  
2 tbsp chopped mint  
1 tbsp flat leaf chopped parsley  
100g toasted pine nuts

## Method

- Cover the couscous with boiling water. Stir well, cover and leave to stand for 5 minutes. Separate the grains with a fork.
- Peel and stone the avocado and cut into chunks. Toss in the lemon juice.
- Mix together the avocado, chickpeas and pepper and add to the couscous.
- Split the pomegranate and remove the seeds (do this over a bowl to catch the juice) add the seeds to the couscous.
- Add the orange juice to the lemon juice and whisk in the oil. Add the dressing and herbs to the couscous and fork through. Serve with a sprinkling of pine nuts.

## Kidney bean, vegetable and chorizo rice

Prep time: 20 mins - Cooking time: 10 mins - Serves: 4

## Ingredients

1 onion (diced)  
4 stalks of celery  
1 tbsp olive oil  
1 tsp coconut oil  
1 large sweet potato (diced)  
2 or 3 cloves of garlic  
1 bottle of organic tomato passata  
1 tin of kidney beans  
5cm chorizo sausage  
Half a bag of spinach (washed)

1 yellow pepper (chopped)

Basil

Whole grain rice

1 tsp paprika

### Method

- Dice the onion and sauté with the celery in the olive and coconut oil.
- Dice 1 large sweet potato and add to the pan with the garlic. Let it sweat for 5 minutes then add the tomato passata.
- Add the kidney beans and the chorizo and cook for a further 5 minutes.
- Add the spinach and chopped yellow pepper, let simmer and add the basil and paprika.
- When the spinach has wilted, serve with whole grain rice and a small salad.

### DINNER



### Chicken and roast vegetable pasta

Prep time: 10 mins - Cooking time: 15 mins - Serves: 4

This low-fat chicken pasta is a great alternative to salad, packed with proteins and nutrients.

### Ingredients

4 chicken fillets, skinless & cut into chunks

1 red pepper, seeded & cubed

1 courgette, cut into chunks

1 red onion, quartered

2 firm tomatoes, halved

175g (6oz) gluten-free pasta

Salt and black pepper

1 tbsp oil

### Method

- Put the vegetables on a roasting pan and drizzle

- with most of the oil. Season with salt and pepper and place under a hot grill for 5-10 minutes, turn occasionally until slightly charred and softened.
- Wipe a large frying pan with oil, heat the pan and add the chicken pieces.
  - Cook on a high heat for 4-5 minutes, turning the chicken frequently until golden brown.
  - Meanwhile, cook the pasta in a large pan of boiling water. Drain and return to the pan.
  - Add the charred vegetables and chicken to the pasta and toss. Serve with a herb garnish.



### Seven vegetable stir fry

Prep time: 15 mins - Cooking time: 10 mins - Serves: 6

#### Ingredients

250g pack Thai rice noodles

1-2 tbsp groundnut oil

A bag of pre-prepared stir-fry vegetables

1 inch fresh root ginger, peeled and sliced

4 tbsp sweet chilli dipping sauce/hoisin sauce

1 red chilli, deseeded & finely chopped

Handful each of mint and coriander, chopped

Soy sauce, to serve

#### Method

- Put the noodles in a large bowl and pour over enough boiling water to cover. Leave for 5 minutes whilst cooking the vegetables.
- Add 1tbsp of oil to a hot wok and stir-fry the pepper and ginger for 30secs. Add the sweetcorn, carrots and asparagus and stir-fry for 1 minute, then add the sugar snaps and cook for 1 minute.
- Mix in the chilli dipping or hoisin sauce and 4tbsp water, then add the red chilli, pak choi, beansprouts and spring onions and cook for 2 minutes.
- Drain the noodles. Toss with mint and coriander. Serve topped with stir-fried vegetables and soy

sauce for seasoning.



### Grilled mackerel with chilli and watercress salad

Prep time: 15 mins - Cooking time: 5 mins - Serves: 4

#### Ingredients

- 1 tsp crushed black peppercorns
- 2 tsp ground coriander
- 1 tbsp finely grated lemon zest
- 4 oranges
- 1 red chilli, deseeded and finely chopped
- 8 x 150g mackerel fillets (not smoked)
- 2 tbsp chopped coriander
- 110g watercress
- 1 small red onion, peeled and thinly sliced

#### Method

- Preheat the grill to high. Mix the peppercorns, coriander and lemon zest in a bowl. Grate the zest from half the orange and stir into the mixture with half the red chilli.
- Lightly cut the skin of the mackerel and press the mixture onto the fish. Place the mackerel on a grill rack and grill, skin-side up for 5 minutes. Sprinkle with chopped coriander.
- Meanwhile, segment the oranges. Peel away any white pith.
- Divide the watercress between four plates and scatter with the orange segments, red onion and remaining chilli. Top with grilled mackerel.

It takes us 4 hours to wake up apparently! Amersham nutritionist Diana Wright tells @ianlee why. She comes prepared! [twitter.com/BBC3CR/status/...](https://twitter.com/BBC3CR/status/...)

BBC Three Counties (@BBC3CR) [September 13, 2012](#)

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