Nutrition Essentials For Busy Health Professionals

Knowledge for Optimal Health
Unharnessed Power
The Importance of Nutrition

• Halve risk of dying from heart attack.
• Reduce risk of eczema by 30%
• Reduce death from measles by 50%
• Halve breast cancer risk.
The Importance of Nutrition

• Obesity and Diabetes (Type II)
  – Our biggest current challenge
  – Processed Food Disease
    • Not just the obvious Coke and chips.
The Importance of Nutrition

• Some Nutrients Work Better than Drugs:
  – Osteoarthritis
The Importance of Nutrition

• Some Drugs Work Better With Nutrients
  – Epilepsy
  – CVD
The Importance of Nutrition

• Some Drugs have fewer Side Effects with Nutrients
  – Statins
  – Antibiotics
  – PPIs
Martin’s Story: The Shoulders of Giants!
Busy Health Professionals

• Keeping the front-line well
What Do Nurses Need?

• Immune Support
• Boundless Energy
• Stress Support
Is A Good Diet Enough?

• What is a good diet?
  – Adequate quality protein
  – Adequate good fats
  – Low GL carbohydrates
  – Plenty of fibre
  – Avoid sugar (has 50 different names)
  – Avoid fruit juice
  – Avoid refined grains
  – Plenty of food variety
Immune Support

• Vitamin A:
  – Important for structure of epithelial tissue
  – Shown to inactivate viruses \textit{in vitro}
  – Critical for the production of antibodies and many immune cells.
  – Infection causes decreases in Vitamin A levels.
  – Supplementation decreases mortality from measles.
Immune Support

• Vitamin D:
  – Triggers antimicrobial peptides during infection
  – Kills bacteria *in vitro*
  – Supplementation decreased infection in children and African American women.
  – Anti cancer effects.
Immune Support

• Zinc:
  – Required for the production of all lymphocytes
  – Activates NK lymphocytes
  – Shown to help prevent influenza
  – May inhibit rhinoviruses, EBV, and others
  – May inhibit parasites and worms.
Immune Support

- Selenium
- Iron
- Vitamin C
- Probiotics
- Herbs: garlic, Echinacea, golden seal, etc
Boundless Energy

- Fatigue is not just feeling tired
- Energy (ATP) required for all metabolic processes.
- ATP made in mitochondria
- 60% of people visiting GP.
Boundless Energy

• ATP production:
  – Oxidative phosphorylation → 32 Moles of ATP
  – Back up system → 2 moles of ATP

• Impaired by:
  – Stress
  – Free radical damage
  – Hypothyroidism
  – Poor diet
Nutrients for Mitochondria

- Oxygen (Iron)
- B vitamins
- CoQ10
- Acetyl carnitine
- Ribose
- Good fats
- Exercise
- Phosphorous
- Magnesium
- Protein
- Zinc
- Antioxidants
Stress

• Physical
• Emotional
• Short vs Long Term
• Causes fatigue, GI upset, anxiety, insomnia, increased risk of CVD
Stress

• Role of Diet
  – Poor diet causes stress
  – Good nutrition helps to cope with stress
  – Whole unprocessed foods
  – Sugar
  – Alcohol
  – Caffeine (in sensitive people)
  – Protein
  – Good Fats
I love Yoga.
Stress: Helpful Nutrients

• Magnesium
  – Excrete more during stress
  – Need for magnesium doubles during stress
• B Vitamins
  – Essential fuel for adrenals
Stress: Helpful Nutrients

• Protein especially tyrosine
  – Tyrosine 150mg/kg prevents decline in physical and cognitive performance during stress.
  – Precursor to Noradrenaline

• Vit C
  – Decreases secretion of stress hormones

• Vit A
  – Prevents stress-induces gastric ulcers
Stress: Helpful Nutrients

- **L-Theanine:**
  - Generates relaxing alpha waves in brain
  - Enhances alertness
  - Improves concentration
  - Shown to decrease stress-induced increases in heart rate
Busy Health Professionals

• NZ: The Land of Plenty (except time and energy!)

• Nutritional imbalance is common:
  – Deficiencies (e.g. Protein in elderly):
    • Intake, digestion, hormones, stress, co-factors
  – Excesses (obesity and modern diet)

• Are RDIs adequate for everyone?
RDIs

- Average calcium intake below RDI in adolescent boys and most females.
- Average folate intake >50% in women aged 19 to 44.
- Iron intake below RDI in 25% of young women.
- Zinc below RDI in 50% of women and 10% of men above age of 19.
- Magnesium intake below RDI in 25% of women over 19 years of age.
- Phosphorous intake below RDI in 20% of women over 19 years.
- Vit A intake below RDI in 25% of adults.
Macronutrient Intake

• Fruit and vege intake below recommended levels in 35% of adults and 65% of adolescents.
• Fibre intake below recommended in 50% of women and 25% of adult men.
• Seafood oil intake less than recommended in 65% of adults.
• Beverages accounted for 60% of total energy intake in adults.
Excess Consumption

• 75% of males 45 to 64 years are overweight or obese (BMI >25).
• 25% of 45 to 64 year olds are obese (BMI >30)
• 40% of adults had a BMI between 20 and 25.
Take Home Message

• Lead by example
• Look after yourself:
  – Eat well
  – Breath
  – Move
  – Basic supplementation
Diet Advice

• Macronutrient balance:
  – Low GI carbohydrates (Sugar is EVIL!)
  – Adequate protein (high quality)
  – Quality fat (omega-3s, 6s, saturated)
  – Plenty of fibre

• Micronutrient intake
  – 25+ different foods per week
Diet Advice

• Use of Supplements:

• Biochemical Individuality, but
  – Fish Oils
  – Magnesium
  – Probiotics
  – Multi vitamin/mineral
  – Vitamin D
Special Needs?

• Seek some specialist help
• Read my book:
  www.OptimalPrescriptionHealth.co.nz
Questions?
Under Nutrition is Common

• 30-40% of people hospitalised for illness or major surgery are discharged from hospital with frank malnutrition, resulting in an increased rate of complications and impaired recovery.

• “malnutrition remains a largely unrecognised problem in hospital and highlights the need for education on clinical nutrition” (McWhirter and Pennington, BMJ 1994; 308:945-8).
Disease-Nutrient Interactions

- RDIs: Based on requirements of “ordinary” healthy people
- What about those with special needs:
  - Illness (IBD patients need 5 x RDA)
  - Coeliac disease
  - Psychology (ADHD, Depression)
  - Stressed (Protein requirements can be double)
  - Athletes (80% of AIS athletes have deficiencies)
Incompatible Nutrition

• Food allergy / Sensitivity
  – Hugely under recognised problem
  – Underlies many chronic health conditions

• E.g. Jane, Roly, Paulette, Sean, Martin ...
Drug-Nutrient Interactions

- Statins and muscle pains, fatigue, confusion.
- Antibiotics
- PPIs: IBS, anxiety, agitation
- Metformin: digestive dysfunction, memory, learning, fatigue, mood, balance
- ACE Inhibitors: cough, poor wound healing, acne, male sexual function, rheumatoid arthritis, digestive function
- Epilim: GI upset, tiredness
Genetic Polymorphisms

• Result in suboptimal functioning of certain enzymes.

• E.g. MTHFR 677C→T polymorphism
  – Need more folic acid to make enzyme work
  – Increased risk of CVD, Osteoporosis, migraine, depression, bipolar, schizophrenia, Down’s syndrome, neural tube defects, ...

• Zinc in Harris family????
Genetics vs Environment

• Genetics may be a gun pointing at your head (E-Cadherin gene and gastric cancer, or BRCA2 and breast cancer)

BUT

• The Environment “pulls the trigger”

• Nutrition is a large part of your environment
So What?

- Your Chronic Health Condition?
- The health of your family?
- The health of your patients?

- Martin (arthritis)
- David (Heart and agitation)
- Jane (aspergillosis)
Immune Conditions

• Gut Health = 70% of Immune system
  – Diet
  – Digestion
  – Essential fatty acid balance

• Specific nutrient requirements
Cancer

- Cytochrome P450 1B1 found in all cancer cells so far, but not in healthy cells
- Natural plant antifungal compounds activated by CYP1B1 → cell death.
- Organic vegetables.
- Bitter varieties (Brussel sprouts)