

SUB HEALTH: THE CHRONIC CATABOLIC STATE AND THE POSSIBLE ROLE OF CHRONIC INFECTION.

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Sub Health: Typically seen as a reduction in energy levels, change in sleeping patterns, increased incidence of viral infections and a loss of vitality with no defined disease being diagnosed: a chronic condition of deteriorated physiological function between health and illness. Examples of Sub Health: Chronic Fatigue Syndrome, Fibromyalgia, Rheumatoid Arthritis, Dyslexia and Autism.

Chronic Catabolic State. Research from our laboratory at the University of Newcastle, Australia, into Chronic Fatigue Syndrome, Fibromyalgia, Rheumatoid Arthritis, Irlen Syndrome and Autism, has indicated that in these Sub Health conditions there is a switching of the metabolism of the body into a chronic catabolic state. Such a catabolic state is usually seen as an acute (short term) response due to the activation of the immune system in response to bacterial or viral infections. It is also induced by trauma or competitive physical exertion. Our studies have revealed that in Sub Health syndromes mentioned above, it seems that this catabolic state is maintained for a very long time with resultant cellular malnutrition, particularly of amino acids.

Chronic Infection. It is most likely that these Sub Health individuals are carrying a chronic infection which their immune systems are unable to completely clear up. The battle between the host and the invading organism most likely goes on for the lifetime of the individual concerned. We believe these infections are of the intra-cellular type probably due to rickettsia, ehrlichia, and mycoplasma families of bacteria or possibly also viruses. Treatment is at two levels. Where the organism is known, antibiotics or antivirals can be used. Where the organism is not known or not-believed to exist by the clinician then treatment is at the level of alleviating the body's response, i.e. the symptoms of Sub Health. An example of this can be seen in comparing the treatments of gastric ulcer in humans prior to and after the discovery of its bacterial cause in 1982.

References:

1. McGregor, NR; Dunstan, RH; Zerbes, M; Butt, HL; Roberts, TK; Klineberg, IJ. (1996) Preliminary determination of a molecular basis to chronic fatigue syndrome Biochem Molec Med 57; 73-80
2. McGregor, NR; Dunstan, RH; Zerbes, M; Butt, HL; Roberts, TK; Klineberg, I. (1996) Preliminary determination of the association between symptom expression and urinary metabolites in subjects with chronic fatigue syndrome Biochem Molec Med. 58; 85-92
3. Klineberg, IJ; McGregor, NR; Butt, HL; Dunstan, RH; Roberts, TK; Zerbes, M. (1998) Chronic Orofacial Muscle Pain: A New Approach to Diagnosis and Management. Alpha Omegan, Scientific Issue. 91; 25-28

4. Butt, HL; Dunstan, RH; McGregor, NR; Roberts, TK; Zerbes, M; Klineberg, IJ. (1998) An association of membrane damaging toxins from coagulase negative staphylococcus and chronic orofacial pain. *J Med. Microbiol.* 47; 577-584
5. Dunstan, RH; McGregor, NR; Butt, HL; Roberts, TK; Klineberg, IJ; Niblett, SH; Rothkirch, T; Buttfield, I. (2000) Characterization of Differential Amino Acid Homeostasis amongst Population Subgroups: A basis for Determining Specific Amino Acid Requirements. *J. Nut. Environ. Med.* 10; 211-223.
6. Robinson, GL; McGregor, NR; Roberts, TK; Dunstan, RH; Butt, HL. (2001) A Biochemical Analysis of People with Chronic Fatigue who have Irlen Syndrome: Speculation concerning immune system dysfunction. *Perceptual and Motor Skills*, 93: 486-504
7. Brown, GK; Martin, AR; Roberts, TK; Aitken, RJ. (2001) Detection of Ehrlichia platys in dogs in Australia. *Aust Vet J* 79, 23-27.
8. Roberts, TK (2003) Going to the Dogs: ticks and emerging diseases. *Today's Life Sciences*, 15: 32-34.
9. Sparkes, DL; Robinson, GL; Dunstan, RH; Roberts, TK. (2003) Plasma Cholesterol Levels and Irlen Syndrome: Preliminary Study of 10- TO 17-Yr-Old Students. *Perceptual and Motor Skills*. 97: 743-752.
10. Martin AR, Dunstan RH, Roberts TK and Brown GK. (2006) Babesia canis vogeli: A Novel PCR for its detection in dogs in Australia, *Experimental Parasitology* 112: 63-65.
11. Brown GK, Canfield, Dunstan RH & Roberts TK (2006) Detection of Anaplasma platys and babesia canis vogeli and their impact on platelet numbers in free-roaming dogs associated with remote Aboriginal communities in Australia' *Australian Veterinary Journal*, 84: 321-325.