

## Conference 24th October – A Personal Report

Julia Newton, Professor of Ageing and Medicine & Consultant Physician, Fatigue Interest Group / Falls and Syncope Service at University of Newcastle gave a lively and most informative presentation of the work she and her team have done as well as the work they are planning to do in the next two years. For the first time I felt that there is hope at last for a definite biomarker of the illness of CFS/ME.

This research is funded by the MRC (Medical Research Council), ME Research UK and the MEA (ME Association) amongst others. The MRC has contributed the most funding and has stipulated that Fukuda criteria are to be used in selecting the 81 people with CFS/ME and they have given Julia and team 20 months to do the research in. The volunteers will be mildly to moderately affected as they will not have the time to go to the homes of severely affected, nor could this group cope with the barrage of tests which can only be done in the laboratory environment; but they hope to extrapolate bits of their research which will be helpful to this group, too.

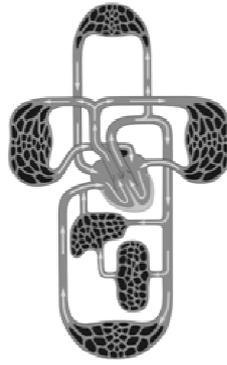
**They will address the following points:**

- 1. Understanding the autonomic dysfunction in CFS/ME and the relationship to cognitive impairment**
- 2. Identify biological fingerprints of fatigue**
- 3. Understand muscle dysfunction in CFS/ME**
- 4. Explore qualitative experience of sleep**

So, needless to say, we hope that Julia will agree to come back to Sheffield in about two year's time and inform us of their findings, fingers crossed!

Julia and team have looked into fatigue associated diseases like MS (Multiple Sclerosis) and Rheumatoid Arthritis which can be diagnosed by a definite test – but CFS/ME presents a big problem as there is a definite lack of diagnosis, as we all know. In a range of diseases characterised by fatigue, they discovered a strong association between fatigue and autonomic dysfunction; they came to the conclusion that fatigue is characterised by abnormalities of blood pressure control. Hence people with CFS/ME experience light-headedness or even black-outs when standing up. In tests 89% of people with CFS/ME experience this Orthostatic Intolerance (OI) and in all cases fatigue severity associates with increased OI. (This was established via the tilt-table test). They found that low blood pressure also leads to memory problems.

## What is autonomic dysfunction ?



### (Definition

Dysfunction of the autonomic nervous system (ANS) is known as dysautonomia. The autonomic nervous system regulates unconscious body functions, including heart rate, blood pressure, temperature regulation, gastrointestinal secretion, and metabolic and endocrine responses to stress such as the "fight or flight" syndrome. As regulating these functions involves various and multiple organ systems, dysfunctions of the autonomic nervous systems encompass various and multiple disorders.)

The team also took muscle biopsies and grew them in the laboratory to test muscle fatigue. They found that after exercise, people with CFS/ME produced acid in their muscles which was difficult to disperse.

They also found indications of cardio myopathy as hearts of people with CFS/ME had to work much harder in response to the stress of standing up compared to the control group. They also detected a twist of the heart in the pumping action – hence the heart is working less efficiently.

By Ute

## Conclusion

- Symptoms suggestive of autonomic dysfunction are common in fatigue.
- Autonomic dysfunction is associated with fatigue severity.
- Central and peripheral abnormalities are detectable in those with fatigue using state of the art techniques.
- Cardiovascular response to standing may have potential as a diagnostic biomarker in fatigue.