# Wetenschap voor Patiënten
## (Science to patients)

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# Webinar 43: Introduction /experience with ME

**Prof. Julia Newton. Broadcast June 3rd 2014**

My name is Julia Newton. I'm dean of clinical medicine at Newcastle university. I'm also professor of ageing and Medicine. I work at Newcastle University to do my research and I do my clinical work at the Newcastle hospitals NHS foundation trust in the UK.

**How did you get involved in ME?**

I originally did a PhD in laboratory based science here at Newcastle University, looking at physiological changes in the gastrointestinal tract. When I became a consultant working as an independent researcher, I then realised that to sustain a research career I needed to have something that would bring together my clinical practice and my research practice. So as a result I then started to investigate blood pressure regulation in my clinical practice which was falls and blackouts and began to apply that knowledge to the study of fatigue initially in patients with chronic disease.

**What kind of research did you do regarding ME?**

Over the last decade or so, we've been developing a range of different techniques to look at fatigue in patients with ME and in patients with fatigue associated chronic diseases. So we've been developing tools that allow us to measure autonomic nervous system function in the laboratory which were now taken into clinical practice. We've also performed a range of MRI investigations looking at brain, heart and muscle function in patients with ME and fatigue associated diseases.

**What are the most important discoveries you made?**

At the moment perhaps some of the most important things that we've been finding in our studies, relate to changes in how we manage ME in the clinic. So we've shown that patients are more likely to have problems with their autonomic nervous system and we've developed ways that we can integrate looking for these changes into the clinic. So we've recognised things like positional tachycardia syndrome and neurally mediated hypotension and we now look for those in our clinical practice.

The other things that we've found more recently are abnormalities on MRI scans, so we've shown that there are problems with cerebral blood flow on brain MRI, there are changes in cardiac bioenergetic function on cardiac MRI and we have also very recently shown that there are changes in muscle bioenergetic function when we exercise patients in the MRI scanner. More recently we've also taken muscle biopsy cells from patients with ME and

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grown those in the laboratory and we're beginning to develop techniques that will allow us to detect changes in acid in the muscle cells and begin to modify those changes with medications.

**In which direction is your research leading you now?**

So at the moment, we're very excited about the studies that we're currently doing. We've a large MRC study going on at the moment, so funded by the British government, that is allowing us to biobank samples from patients with ME and also to look at the autonomic nervous system and where the problems related to its function might arise.
So we wonder whether there may be problems in the brain centres that control the autonomic nervous system or whether or not there may be a problem of the vascular system that is controlled by the autonomic nervous system. And our current studies are aimed at teasing out where these abnormalities might lie so that we can begin to develop targeted treatments.

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