

# REDEFINITIONS OF ME/CFS - A 20<sup>TH</sup> CENTURY PHENOMENON

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## INTRODUCTION

If the cause of a disease, the way in which it is acquired and the processes by which damage is caused are known, no definition is needed. To the very few physicians still practicing today who began seeing patients with this illness some 40 years ago and who have continued to record and publish their clinical findings throughout, the current enthusiasm for renaming and reassigning this serious disability to subgroups of putative and vague “fatigue” entities, must appear more of a marketing exercise than a rational basis for essential international research. It was not always so unnecessarily complicated!

## MODERN DESCRIPTIVE OR RESEARCH DEFINITIONS OF ME/CFS

These have gradually evolved, depending on the technology available throughout the 20<sup>th</sup> century:-

### 1. A POLIOMYELITIS-LIKE ILLNESS (Descriptive, 1910-1958)

Historically the clinical distinction between ME/CFS and abortive/non paralytic poliomyelitis has always been blurred. General awareness of a second polio-like illness was not raised until the early years of this century. Striking new features of that period were major epidemics of paralytic polio accompanied sequentially, seasonally and geographically by outbreaks of “atypical polio”, 38 of which are clearly recorded in medical literature prior to 1965. At this point, the apparent conquest of the most disabling of all neurological infections by immunisation led to lack of interest in further research.

Advantages of the “polio-like” description - general awareness of the entity by physicians; information readily available in standard text books and medical journals. Supportive evidence: (a) a virological distinction between the 2 diseases was not available until the development of virus culture in 1948. This resulted in the discovery of some 69 related polio and non-polio enteroviruses. Although the majority of host/virus contacts produce subclinical infections, these agents are extremely versatile with a wide range of overlapping tissue affinities. They are reliably associated with many acute infections of the respiratory and intestinal tracts; with middle ear, neurological, skin, muscle, throat and mucous membrane infections; with epidemics of viral meningitis, Bornholm and Hand Foot and Mouth disease and with chronic sequelae affecting the brain, heart muscle, the pancreas and other endocrine glands. (b) Serological studies in Iceland, following the introduction of oral polio vaccine in 1958, indicated that a 1948 epidemic of Iceland Disease (ME) in the north of the island effectively blocked a 1957 epidemic of polio type I in the south from spreading north. At the same time the response to polio type I oral vaccine was standard in the south but aberrant in patients who suffered from the 1948 epidemic in the north. This indicated a close relationship between the agents of both diseases with competition for receptor sites in the bowel and persistence of the 1948 epidemic agent over 7 years.

### 2. MYALGIC ENCEPHALOMYELITIS (Descriptive 1958-1988)

In this halcyon period of increasing co-operation between clinicians and their technical or laboratory colleagues, ME/CFS research was still determined by the meticulous observation and examination of patients rather than by non clinical doctors or scientists working at some distance from patient care. Research into ME/CFS remained an acceptable subject for MD theses at prestigious Medical Schools. Such studies by Wallis<sup>1</sup> and by LYLE<sup>2</sup> in 1956 (both of whom were involved in community care) have left us, in the first instance, with a remarkably accurate description of the disease in adults and the corresponding variations in children and,

in the second case, with the recorded isolation of ECHO 9 virus (a non-polio enterovirus) from infected patients. In the same year RAMSAY<sup>3</sup> was responsible for the introduction of the descriptive term “Myalgic encephalomyelitis” (ME) into medical literature (though some would argue that the virus does not persist and that “itis” should be changed to “opathy”).

Advantages of the descriptive name (ME) - With the widespread use of this name in the UK, Canada, Australasia and elsewhere over the past 40 years, international collaborative research was simplified and made feasible.

Supportive Evidence: With the rapid development of technology and access to international publication, the UK retained its reputation as a leading centre of ME/CFS research and remained able to report clinical studies backed up by molecular biology, brain imaging, sophisticated hormonal and other biochemical studies. At this point, with sound evidence of an infective cause, the way in which such infection is spread and the pathogenesis of the disease, why were we urged to adopt the “fatigue definitions” inflicted upon ME/CFS sufferers by USA scientists?

### **3. THE FATIGUE STATES (RESEARCH DEFINITIONS 1988-1999)**

In those countries which have adopted mass polio immunisation during the past 30 years, outbreaks of ME/CFS still continue unabated. Interest in one such epidemic (Lake Tahoe, Nevada USA 1984) misdiagnosed initially as Epstein-Barr Glandular Fever - a Herpes virus infection, led a group of non-clinical scientists active in the field of Herpes virus research and evaluation of drugs, to formulate and tailor a fitting new research definition (Holmes et al 1988). The exclusion or downgrading of many characteristic ME/CFS symptoms led to an unreal emphasis on psychiatric explanations and diminished estimates of the real prevalence. Attempts to correct this initial “Fatigue” definition in the UK (Sharpe et al 1991) the USA (Fukada et al 1994) and in Australia (Hickie et al 1995) became so inclusive of a heterogeneous population of sufferers from psychiatric and miscellaneous non psychiatric states as to elevate the suggested prevalence of ME/CFS by some 250 times. Major mistakes in these definitions include: (i) overlooking the distinguishing encephalitic features of ME CFS (ii) elevating “fatigue” (an inescapable accompaniment of normal human existence and of cardiovascular, metabolic malignant, psychiatric, neurological and other disabling conditions) to unreal diagnostic importance among ME/CFS symptoms.

(iii) to suggest that ME/CFS is merely one subgroup amongst this heterogenous collection of physiological and pathological states, makes thus making any attempt at differential diagnosis between them impossibly expensive to pursue. (iv) to suggest that diagnosis must be delayed for 6 months, vitiates any real attempt at virus investigation, especially among the young. It has to be remembered that these “Fatigue” definitions were devised specifically for research, not clinical purposes; that they exclude variations in children and adolescents and that scientists in the USA (their main country of origin) are now foremost in seeking a more descriptive name than that of “Chronic Fatigue” for this illness!

To Summarise: I would urge all our colleagues to look again at the literature prior to 1988 before redefining this illness. Meantime, the Ramsay description of myalgic encephalomyelitis in 1986 with slight modifications to form a short definition<sup>4</sup> still remains a useful guide to those new to this work.

### **THE RAMSAY DEFINITION**

“A syndrome initiated by a virus infection, commonly in the form of a respiratory or gastrointestinal illness with significant headache, malaise and dizziness sometimes accompanied by lymphadenopathy or rash. Insidious or more dramatic onsets following neurological, cardiac or endocrine disability are also recognised. Characteristic features include:-

(1) A multisystem disease, primarily neurological with variable involvement of liver, cardiac and skeletal muscle, lymphoid and endocrine organs.

(2) Neurological disturbance - an unpredictable state of central nervous system exhaustion following mental or physical exertion which may be delayed and require several days for recovery; an unique neuro-endocrine profile which differs from depression in that the hypothalamic/pituitary/adrenal response to stress is deficient; dysfunction of the autonomic and sensory nervous systems; cognitive problems.

(3) Musculo-skeletal dysfunction in a proportion of patients (related to sensory disturbance or to the late metabolic and auto immune effects of infection)

(4) A characteristically chronic relapsing course

#### **WHAT IS NEEDED FOR THE FUTURE?**

(1) A short epidemiological summary

(2) A working definition suitable for clinicians and researchers

(3) A modified definition for children and adolescents

#### *References:*

<sup>1</sup>. WALLIS AL. An investigation into an unusual disease seen in epidemic and sporadic. Form in a general practice in Cumberland in 1955 and subsequent years MD Thesis Edinburgh University 1957

<sup>2</sup>. LYLE WH. An outbreak of a disease believed to have been caused by ECHO 9 Virus. Annals of Internal Medicine 1959; 51: 248-269

<sup>3</sup>. RAMSAY AM. Encephalomyelitis simulating polio myelitis. Lancet. 1956;1: 761-766

<sup>4</sup>. DOWSETT EG. RAMSAY AM. Myalgic encephalomyelitis - a persistent enteroviral infection? Post graduate Medical Journal. 1990; 66: 526-530