

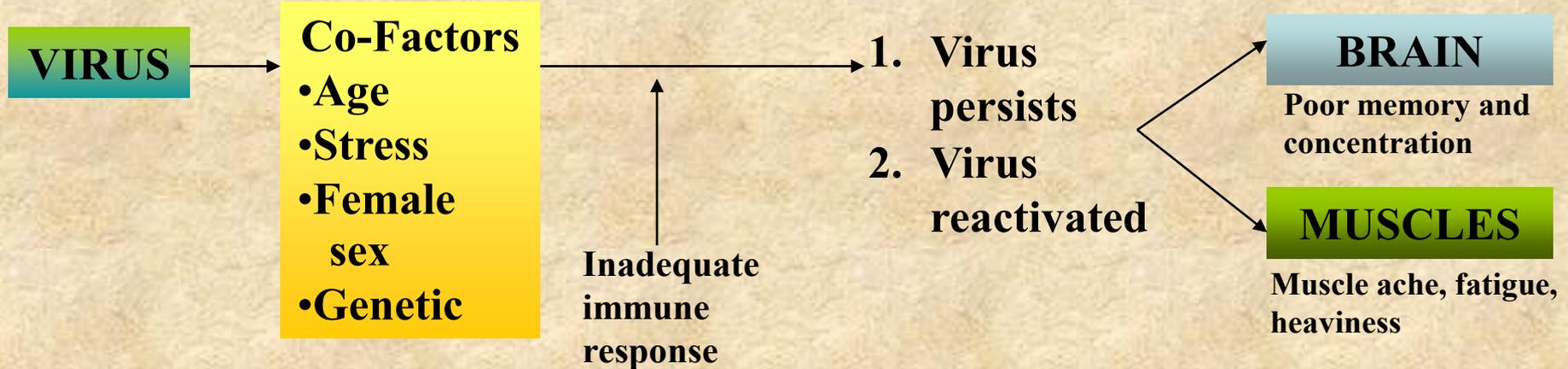
# POST-VIRAL FATIGUE SYNDROME

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# PATHOLOGY OF POST-VIRAL FATIGUE SYNDROME



Two modes of onset: a) acute after an infection; b) Insidious, gradual. Of the latter he says:

“It may be that infection with the ‘right virus’ did initially take place and that, although it caused no obvious bout of illness at the time, it went on to persist in the body, eventually causing ME”. = Latent Heat

## NOTE

“Virus persists” = Residual pathogenic factor

“Virus reactivated” = Latent Heat

“Inadequate immune response” = Kidney deficiency

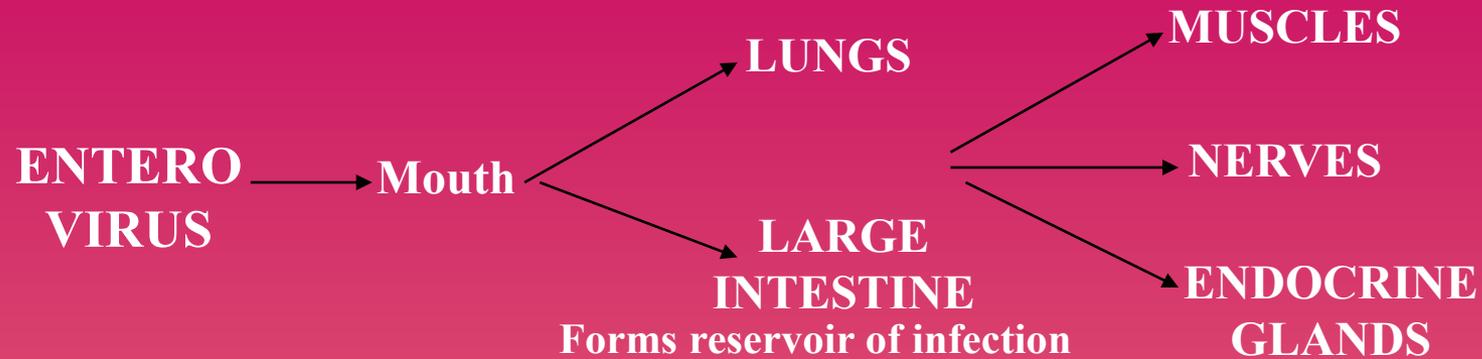
## **ENTERO-VIRUSES**

**Enteroviruses enter via the mouth causing sore throat and enlarged glands. Immune response can be compromised by physical or mental stress, immunosuppressive drugs, pregnancy, malnutrition or surgery.**

**If primary immune response fails, enteroviruses can pass to lungs or large intestine producing a chest infection or gastroenteritis. Inside the intestines, the enteroviruses remain and multiply forming a reservoir of infection. From here, they can spread via the blood stream to other tissues including nerve, muscle and endocrine glands. Enteroviruses have a particular tropism for muscles and nervous tissue.**

**Studies have shown an abnormality of the immune system in ME which are indicative of a normal response to a persisting virus infection rather than immune deficiency (as in AIDS). Although the virus has been recognized and the immune system is reacting but it is unable to eliminate it.**

# ENTERO-VIRUSES



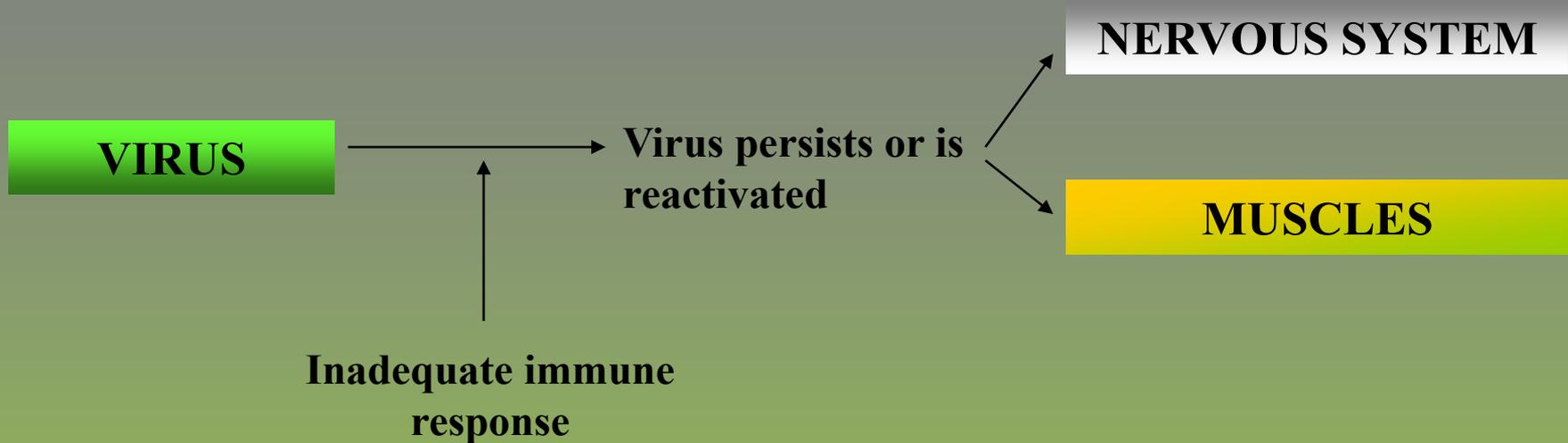
Enteroviruses consist of 70 serotypes including Coxsackie A and B viruses, echovirus and polio virus.

## FACTORS AFFECTING IMMUNE RESPONSE:

- Physical or mental stress
- Immunosuppressive drugs
- Pregnancy
- Malnutrition
- Surgery
- Immunizations
- Excessive sport and exercise

Studies show a new way for viruses to do harm. They can act subtly on a cell and disorder its functions, but not severely enough to kill the cell they infest. For the host, the end result is disturbed homeostasis and disease.

# POST-VIRAL FATIGUE SYNDROME



Nervous system: muzziness of the head, dizziness, difficulty in finding words, difficulty in concentrating, poor memory. slow thinking

Muscles: muscle ache, feeling of heaviness of the muscles, muscle ache on exertion, tiredness

*“It is possible that infection with the “right” virus took place and that although it did not cause symptoms the virus persisted causing post – viral syndrome”  
(Shepherd, 1992)*

# **VIRAL INFECTION IN POST-VIRAL FATIGUE SYNDROME**

- Elevated neutralizing antibody titres against Coxsackie B viruses were detected in 50% of ME patients compared with 17% of healthy controls.**
- Coxsackie B virus-specific IgM (indicating recent or persistent infection) was detected in 31% of ME patients compared with 9% of controls**
- Virus-specific IgM responses were detected in sequential sera from some ME patients over 1 years or longer suggesting persistent viral infection**
- Muscle biopsy samples from 140 ME patients: 24% were positive for the presence of enterovirus RNA. This is a highly significant finding ( $p<0.00001$ ) as enterovirus RNA was not detected in any of the 152 control samples of human muscle. Enteroviruses are capable of persisting in muscles for years**
- Studies (from circulating IgM and IgG in ME patients) show that ME patients recognize the virus and respond to it but without eliminating it for extended periods.**