Lyme disease:

Facial Palsy Case Study

Lyme disease is a **bacterial infection** that can be **spread to humans by infected ticks**.
Early diagnosis and treatment can lead to a resolution for many patients.
Late or missed diagnosis can result in **persistent and debilitating symptoms**.

Key points

- Lyme disease is the **most common cause of facial nerve paralysis in children** and is caused by the tick-borne spirochete of the Borrelia species (Penrose et al:2018).
- **Facial palsy can be misdiagnosed as Bell's Palsy**, which risks not identifying the infectious cause of the condition and antibiotic treatment being delayed (Cooper et al:2017).
- A research project looking into high frequency of paediatric facial palsy due to Lyme disease in a geographically endemic region concluded that **in areas endemic with Lyme disease, this should be considered as the likely cause of facial nerve paralysis in children until proven otherwise**. (Munro et al:2020).
- The study by Penrose et al also concluded that **clinicians should be considering Lyme disease as their differential** in children presenting with facial palsy.
- The NICE guideline relating to Lyme disease (NICE: 2018) states that **infected ticks can be found throughout the UK**, although some areas appear to have higher prevalence.

View reference links and research paper by Julia Knight. RN Child (Retired), BSc (Nursing), BMedSci (Specialist Community Nursing & Healthcare Practice), Press and Community Outreach Manager and Trustee, Lyme Disease UK at ***www.lymediseaseuk.com/clinicians/facial-palsy-resources***

Why Lyme disease infections can be missed or under-treated

- The **possibility of a Lyme disease infection not being considered.**
- The **erythema migrans (Lyme rash) not being present or recognised.**
- Being prescribed an **incorrect dose or duration of course of antibiotics** and/or a **second course not considered**. e.g. Antibiotics for children are much higher doses than for other childhood infections.
- **Relying on a positive blood test for diagnosis** before treating with antibiotics or **testing too early**.

Lyme Disease UK is a UK charity providing patient support and raising awareness of Lyme disease.
We want to ensure that all patients seeking medical advice for a tick bite, **erythema migrans (Lyme rash)** or symptoms of Lyme disease receive the correct advice, timely diagnosis and treatment. **One of our goals is to raise awareness of Lyme disease and early symptoms with primary care physicians to help improve long term outcomes for patients.**

Scan the QR code to visit Lyme Disease UK Clinicians Hub for links to:

- RCGP Lyme Disease Toolkit
- NICE Lyme Disease Guideline
- BMJ Treatment Choices for Lyme Disease
- Update your practice with slides and short animation on current practice guidelines
- The RCGP/Lyme Disease Action eLearning Module (free to all health professionals)

Danielle is ten years old and lives in Berkshire. This is her story of contracting Lyme disease with facial palsy, written by Danielle's mum, Jenna Stalker*. Jenna writes:

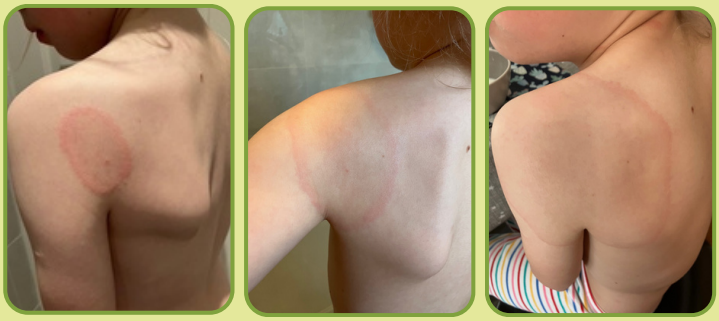
Danielle

*"It was the **facial asymmetry** that led us to getting her checked out. Later when piecing things together we realised **the rash she had developed on her shoulder was from a tick bite**. As it didn't have the typical bull's-eye presentation, it was initially misdiagnosed and treated as ringworm).*

We were worried it was signs of a stroke. We didn't get seen on our first trip to A&E as after 5 hour wait, an emergency came in and we were advised to go home at 2am. We had a follow up GP appointment in the morning, the doctor diagnosed her symptoms as a virus (the spreading rash and the facial palsy together, along with high temperature and not feeling right). We were given a further prescription for cream for the rash.

It was only when my mum was discussing her concerns with a colleague (nurses in various community roles), that the potential of it being Lyme disease was raised. My husband took her back to A&E and after 9 hours got a diagnosis of Lyme disease.

*They sent her away with the prescription for the adult medication (adjusted dose), which our pharmacy couldn't fill. I went to GP surgery and the lead doctor prescribed a standard dose of amoxycillin. It was only during my own research that night that I found the LDUK article, (www.lymediseaseuk.com/clinicians/facial-palsy-resources/ about **treatment and higher doses of antibiotics that are needed for Lyme disease**. We went back to doctors again and finally got the right dose prescription. In the meantime Danielle's face got worse, and she was feeling very poorly. She ended up with 6 days off school.*



Photos of spreading rash taken over 3 week period. Palsy occured in week 4.

*Her face worried us as the NHS just left us to it. We went to our osteopath, she gave us various exercises to do including balloon blowing, to re-strengthen her cheek muscles. I really feel the NHS needs more follow up, as **it took months afterwards for her to look normal again**. She would also tire quickly and had awful debilitating headaches on a regular basis to the extent she even had an MRI to rule out any underlying conditions.*

Danielle is thankfully now fully recovered 10 months later.

*Jenna and Danielle have given permission to include photos to show Danielle's facial palsy and rashes.

Further Resources

If you are interested in learning about facial palsy, find out more from **Facial Palsy UK** - **www.facialpalsy.org.uk**
For further information about facial paralysis and Lyme disease in children visit
www.lymediseaseuk.com/clinicians/facial-palsy-resources