TENS (Transcutaneous Electrical Nerve Stimulation) – Information Sheet

Supporting Hemisphere Balance, Regulation & Functional Neurological Development (NeuroGrowth Programme)

At Children's Therapy Services, we use a range of evidence-informed, functional neurology approaches to support children's neurological, sensory, and developmental needs. TENS (Transcutaneous Electrical Nerve Stimulation) is one of these tools and is used as part of our NeuroGrowth Programme to support brain activation, hemisphere balance, and functional development.

What Is TENS?

TENS is a non-invasive technique that uses low-level electrical stimulation delivered through small electrodes placed on the skin. This stimulation activates underlying nerves and provides input to the nervous system, helping to improve communication between the brain and body.

It is used to:

- Provide targeted sensory input to the nervous system
- Stimulate specific neural pathways
- Support brain activation and organisation
- Enhance motor and sensory integration
- Support regulation and engagement

TENS & Hemisphere Balance (NeuroGrowth Programme)

In our NeuroGrowth Programme, TENS is used within a functional neurology framework to support hemisphere balance. This approach is based on the understanding that differences in brain hemisphere activation can impact movement, regulation, attention, and learning.

Targeted stimulation can be used to support underactive pathways and improve communication between the left and right hemispheres of the brain.

TENS may be used to support:

- Activation of under-responsive brain regions
- Improved left/right hemisphere communication
- Better integration of sensory and motor systems
- Enhanced coordination and movement control
- Improved regulation and attention

Understanding How TENS Supports Therapy

Neurological Activation

• Provides direct input to the nervous system

• Supports activation of targeted neural pathways

• Enhances brain responsiveness and organisation

Hemisphere Integration

• Supports communication between left and right brain hemispheres

• Improves whole-brain coordination

• Enhances functional performance across tasks

Sensory-Motor Integration

• Improves coordination between sensory input and movement output

• Supports more organised motor patterns

• Enhances body awareness and control

Regulation & Engagement

• Supports nervous system regulation

• Improves attention and readiness for learning

• Enhances participation in therapy activities

How TENS Is Used

TENS is used during therapy sessions under professional guidance and is tailored to each child's individual needs and neurological profile.

A typical session may include:

• Initial assessment and identification of target areas

• Placement of electrodes on specific areas of the body

• Short periods of gentle stimulation

• Integration with movement, sensory, or cognitive activities

• Monitoring and adjustment based on response

What Are the Benefits?

✅ Improved brain activation and organisation

✅ Enhanced coordination and motor control

✅ Better sensory processing and integration

✅ Improved regulation and attention

✅ Greater engagement in therapy and learning

✅ Support for hemisphere balance and functional development

Who May Benefit?

TENS may support children who experience:

• Regulation and attention difficulties

• Motor coordination challenges

• Sensory processing differences

• Learning or developmental differences

• Difficulties linked to hemisphere imbalance

Is TENS Safe?

TENS is a non-invasive technique using low-level electrical stimulation and is safe when delivered under professional guidance. All settings are carefully controlled and tailored to each child to ensure comfort and safety.

Our Approach at Children's Therapy Services

TENS is integrated into a whole-child, individualised therapy plan which may include functional neurology, movement-based therapy, sensory integration, and cognitive support. All interventions are aligned with meaningful, functional outcomes for each child.