COGNITIVE-MOTOR

WHAT IS COGNITIVE-MOTOR?

Cognitive-motor (also called neural-motor or psycho-motor) is the ability to make movements according to a person's intention. It is sometimes paraphrased as 'think to act'.

People with cognitive-motor challenges may experience a greater degree of involuntary movements compared to most people – that is, movements which they didn't mean to make. On the other hand, cognitive-motor challenges may mean a person wants to move in a certain way, but their body doesn't respond. It can also manifest as difficulty sustaining certain movements, or switching between movements.

On top of affecting movement, cognitive-motor function can effect speech, thoughts and even emotions (referred to as emotional motor dyskinesia).

WHAT CAUSES DIFFICULTY WITH COGNITIVE-MOTOR FUNCTION?

This difficulty with volitional control of movement is underpinned by 'long-weak' neural connections in between the pre-frontal cortex and the cerebellum. Low connectivity impedes the potential for movement intention from the higher brain structures to reach regions where it can be encoded for execution.

This connectivity profile shares a high correlation with Autism Spectrum Disorder.

HOW CAN YOU TREAT DIFFICULTIES WITH COGNITIVE-MOTOR?

The most effective therapy for someone with cognitive-motor function is one that includes movement-based exercises which target the growth of new neural connections. Exercises which involve hitting targets across different regions of the body are effective, as are ones which emulate movements from early in a person's development. When a rhythmic element is included, it stimulates the cerebellum, further enhancing its effectiveness.

References

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