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Title عنوان البحث	Evaluating The Effect Of Surgical Operations On Patients With Spastic Cerebral Palsy Using Fuzzy Logic Type-2
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Abstract خلاصة	<p>Gait analysis has many applications in the quantitative assessment of normal or pathological human gait. Many parameters are calculated in gait monitoring, including spatiotemporal, kinematic, and joint kinematic parameters to evaluate the patient's gait numerically or based on a scale. In this research, a Fuzzy logic type-2 system was used to design a smart indicator, which evaluates the gait deviations of cerebral palsy patients before and after surgery compared to children who develop normally. The proposed methodology starts by extracting features from the trajectory of ankle joint during the gait cycle, and then initializes the FL system based on the extracted features. Finally, evaluate the performance of the proposed index. The results concluded that it is possible to use Fuzzy logic type-2 to evaluate the effectiveness of surgical operations for patients with cerebral palsy. The average value of the index for the patient group decreased by 19%, and this percentage corresponds to the percentage of decrease in the average value of the GPS index, which is equal to 21%. The importance of this research also lies in providing a prototype of a medical decision support system that can quantitatively evaluate disease conditions, as well as evaluate the efficiency of treatment and medical intervention using FL.</p>