



Project Title: Analysis of equine gaits to optimize assisted therapy discipline assignments

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Abstract: There are over 400 different breeds of the domestic horse (*Equus ferus caballus*), each selectively bred for a purpose. Breed differences frequently result in a distinctive gait, or body movement. Individual horses may also have gait variations that differ from other members of that breed. When put under a saddle, these gait movements result in an altered experience for the rider, with some gaits causing increased jostling or rider movement. The utility of a horse for a specific assisted therapy discipline is dependent, in part, on the impact, or bounce factor experienced while riding that horse. We analyzed the gait of horses and created a formula to predict, based on the gait, the degree of bounce factor that would be experienced on that horse. This formula will allow breeders, riders, and trainers working with a horse to quickly and objectively select the discipline best suited for that horse without needing to ride, and subjectively assign the horse to a discipline.