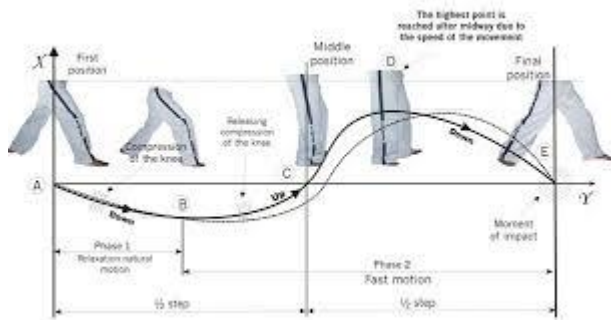


## Wave Motion

In the martial arts, there are 2 types of wave motion shown in many of the techniques.

### 1. Sine Waves

The International Taekwondo Federation (ITF) in particular puts a great deal of emphasis on the Sine Wave motion, in its techniques.

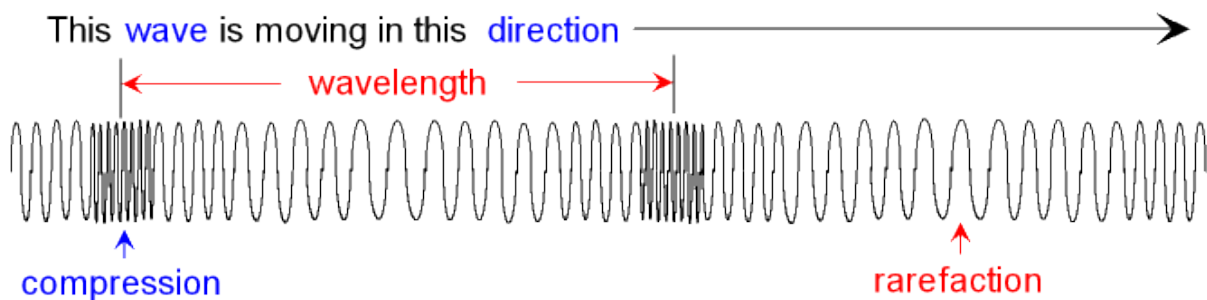


In this movement, the legs bend to drop into the “trough” of the wave before pushing up again just after the mid-point of the step. The practitioner then uses gravity to put extra power into the technique as the sine wave completes, dropping down to complete the technique.

This is a traditional movement but, to many, it is inefficient.

### 2. Longitudinal Waves

Longitudinal waves act like a “pulse” travelling in one direction.



To the martial artist, this means that all of the movement is in the intended direction of the technique. There is no wasted energy and no wasted time.

The legs absorb the up and down movement in the step, storing potential energy in the first half and releasing it as kinetic energy in the second. Your head height does not change so there is no wasted energy, no wasted time and no clues given to the opponent.