

Exercise Therapy

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“Osteokinematics vs Arthrokinematics”

Topic includes the difference between Osteokinematics and Arthrokinematics detailed comparison and contrast.

Definitions:

Osteokinematics refers to the rotary movement of bones or bony segments in space during physiological joint motion. These are the observable movements of the bony levers that occur at joints and are described according to the plane in which the movement occurs, the axis about which it occurs, and its direction.

Arthrokinematics refers to the movement of the articulating joint surfaces relative to one another during joint motion. These accessory movements accompany osteokinematic movements but normally cannot be voluntarily isolated. The principal arthrokinematic movements are roll, slide (glide), and spin.

In Simple Terms:

Osteokinematics = movement of the bone in space (what we observe).

Arthrokinematics = movement between the joint surfaces (what happens within the joint).

Particular	Osteokinematics	Arthrokinematics
Definition	Movement of bones or bony segments in space during physiological joint motion.	Movement of one articulating joint surface relative to another during joint motion.
Nature of movement	Primarily describes the movement of the whole bone or bony lever.	Describes the relative movement occurring between joint surfaces.
Observability	Usually visible and easily observed as the movement of a limb or body segment.	Usually not directly visible because it occurs at the articulating surfaces.
Voluntary control	Can generally be voluntarily performed or controlled.	Normally cannot be voluntarily isolated under normal conditions.
Main movements	Flexion, extension, abduction, adduction, rotation, and circumduction.	Roll, slide (glide), and spin.
Description	Described by plane, axis, direction, and type of bony movement.	Described by the relationship and movement of the articulating surfaces.
Planes	Movements are commonly described in sagittal, frontal, and transverse planes.	Not primarily classified by anatomical planes; movement is

		described according to joint-surface mechanics.
Axes	Movement occurs around an axis, such as a mediolateral, anteroposterior, or longitudinal axis.	Accessory surface motion is analyzed according to the shape of the joint surfaces.
Joint surfaces	Does not primarily describe the detailed interaction between the joint surfaces.	Specifically describes how adjacent joint surfaces move in relation to each other.
Clinical importance	Helps describe and measure gross joint and limb movements, such as knee flexion or shoulder abduction.	Helps explain joint mechanics, maintain appropriate articular contact, and guide assessment and joint mobilization.
Examples	Knee flexion, elbow extension, shoulder abduction, and hip rotation.	Femoral condyle rolling/gliding on the tibia, radial head spinning on the capitulum, and joint-surface gliding.
Relationship	Represents the observable movement of the bony lever.	Occurs simultaneously with and contributes to the osteokinematic movement.

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Reference:

1. Levangie, P. K., & Norkin, C. C. (Eds.). (2011). Joint structure and function: A comprehensive analysis (5th ed.). F.A. Davis Company.
2. Kisner, C., & Colby, L. A. (2007). Therapeutic exercise: Foundations and techniques (5th ed.). F.A. Davis Company.

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