THE JOINTS

(Collated by Michelle Wilkinson www.movingnatually.co.uk)

There are around 400 separate joints in the human body.

A joint is a place where two or more bones fit together.

There are three classifications for joint structure: fibrous, cartilaginous, and synovial.

Fibrous Joints attach bones via fibrous connective tissue which allows little or no movement such is found in the flat skull bones.

Cartilaginous Joints use cartilage tissue reinforced by fibrous tissue to bind bones together. Providing little or no movement they appear as fibrocartilage discs between the spinal vertebrae.

Synovial Joints are the most common form of joint. They enable bones to smoothly slide over each other. The end of each joint bone has a hyaline cartilage which is hard, smooth, and slippery. The space between these bones is narrow and contains oily synovial fluid responsible for joint lubrication and mobility. The joint is enclosed by a tough yet flexible capsule of fibrous tissue and interlaced with ligaments and tendons.

There are varied forms of synovial joints which offer differing ranges of movement.

The Ball and Socket Joint has the greatest movement range. Found in the hips and shoulders, the ball-like head of one bone fits into the socket-like head of another.

The Hinge Joint is found in the elbows, knees and some finger and toe bones. One bone rotates inside a cylindrical hollow of another enabling extension and flexion movement.

The Pivot Joint is located at the first (Atlas) and second (Axis) cervical vertebrae in the neck. The Axis has a projection which fits into the Atlas above allowing the head to turn (rotate). There is also a pivot joint at the elbow which rotates the lower arm turning the palm to face in opposite directions.

The hand gives rise to three synovial joints. The Ellipsoid Joint is a reduced ball and socket joint found at the wrists. An oval dome of one bone fits into a recess of another allowing limited rotation in two planes. The Gliding Joint enables two opposing flat surfaces of bone to glide across one another and can be found in the hand bones (carpals). Unique to the thumb and hand attachment is the Saddle Joint. The thumb bone (phalange) and the hand bone (carpal) fit into each other like a pair of curved saddles providing wide rotational movement in two planes.