A very warm welcome to you dear students to this paper on child psychology. The course code is PSG 101. The title of the unit is infancy and toddlerhood, and today will be studying motor skills, that is module #9.

In this lecture we will be looking at the different motor skills, the dynamic systems view reflexes, gross motor skills and fine motor skills. By the end of this lecture you will be able to differentiate between different kinds of reflexes. You should be able to describe the development of gross and fine motor skills both in infancy and toddlerhood.

So let's look at the dynamic systems theory. Now Arnold Gesell revealed how people develop their motor skills. He had discovered that infants and children develop rolling, sitting, standing, and other motor skills in a fixed order within a specific time frame. These observations show that motor development comes about through the unfolding of a genetic plan or maturation.

However, later studies have demonstrated that the sequence of developmental milestones is not fixed and not due as much to heredity as Gesell suggested earlier.

In the last two decades, the study of motor development experienced a renaissance as psychologists developed new insights about how motor skills develop. One theory was proposed by Esther Thelen named Dynamic Systems Theory. According to this theory, infants assemble motor skills for perceiving and acting. To develop motor skills, infants must perceive something in the environment that motivates them to act and then use their perception to fine tune their movements.

When infants are motivated to do something, they might create a new motor behavior. This new behavior is a result of many converging factors, the development of the nervous system, the body's physical properties, and its possibilities for movement, the goal the child is motivated to reach, and the environmental support for the skill. For example, babies learn to walk only when maturation of the nervous system allows them to control certain leg muscles when their legs have grown enough to support their weight, and when they want to move.

Thus, according to the dynamic systems theory, motor development is not a passive process. Rather, the infant actively puts together a skill to achieve a goal within the constraints set by the infant's body and the environment. The story of motor development begins with reflexes.

Now, the newborn is not completely helpless. Among other things, it has some basic reflexes. Reflexes are inborn reactions to stimuli, they govern the newborn movements, which are automatic and beyond the newborn’s control. Reflexes are genetically carried survival mechanisms. They allow the infant to respond adaptively to their environment before they have an opportunity to learn.

Let's look at the different reflexes, the sucking reflex. This occurs when newborns automatically suck an object placed in their mouth. This reflects enabling newborns to get nourishment before they have associated a nipple with food.

The next reflex is the rooting reflex. Now the rooting reflex occurs when the infant's cheek is stroked or the side of the mouth is touched. In response, the infant turns its head towards the side that was touched in an effort to find something to suck. This rooting reflex disappears at about nine months of age.

The next reflex is called the Moro reflex. This occurs in response to a sudden intense noise or movement when the infant is startled. The newborn arches its back, throws back its head and flings out its arm, then the newborn rapidly closes its arms and legs. This is believed to be a way of grabbing for support while falling.

The grasping reflex: Now the movement of some reflexes reflects is eventually incorporated into complex voluntary actions. One important example is the grasping reflex, which occurs when something touches the infants' palms. The infant responds by grasping on tightly.

The next reflex is the babinski reflex. Now this occurs when the sole of the foot is stroked. The infant's toes fan out and curl, and this disappears by about four months of age.

Stepping reflex is when the infant is held about the surface and the feet are lowered to touch a surface. The infant responds by moving his or her feet, as if to walk. This usually disappears by about four months.

Tonic neck, stimulation, the infant is placed on his back. Now the infant responds by forming a fits. First, with both hands and usually turns head to the right like a fencers pose. Some of these reflexes like coughing, sneezing, blinking, shivering, yawning, for example, persist throughout life.They are as important for an adult as for an infant.

Now let's look at the gross motor skills. One of the gross motor skills is the ability to walk now. Gross motor skills involve large muscle activities such as crawling, moving ones arms, sitting, walking, etc. It also requires postural control.

Now this dynamic process is linked with sensory information in the skin, joints and muscles, which tells where we are in space in the vestibular organs in the inner ear that regulates balance, an equilibrium and in vision and hearing.

By two months of age, infants can sit with support, by six or seven months they can sit independently by about 8 or nine months, infants usually learn to pull themselves to hold onto a chair.

By around 11 months they can stand alone. Now if you look at this picture, you will see the development of gross motor skills across a period of time.

So by around 12 months and a little more than 12 months, infants can walk easily on their own. Though they can, they can't run. They're walking a little step stably, but they learn to walk on their own.

Fine motor skills. Fine motor skills are motor skills that involve more finely tuned movements such as finger dexterity. The ability to unbutton yourself, the ability to hold a spoon and put it in your mouth. The ability to hold a pencil are all fine motor skills.

At birth, infants have hardly any fine motor skills, but develop it later as their muscles develop.So initially, when an infant wants to move, wants to reach out to something they would reach out by moving their shoulders, their elbows and swinging towards an object.

Later, infants, when they want to reach out to something they learn to move, only their wrists, rotating their hand, coordinating their thumb and forefinger to be able to pick up something.

Infants refine their ability to grasp objects by developing two kinds of grasp. One is the Palmer grasp and the other is the pincer grasp. Now the palmer grasp is when the infant uses the whole palm of his hand to pick up something to manipulate an object and the pincer grasp is when the infant uses his thumb and his index finger to be able to pick up objects to be able to manipulate objects.

Experience plays a very important role in reaching and grasping. Infants rely greatly on touch to determine how they will grip an object. 8 month old infants are more likely to use vision as a guide. Around 18 to 24 months of age, toddlers begin to build towers with blocks.

For your references you can refer to Laura Berk Child Development and Santrock Child development.

Thank you.