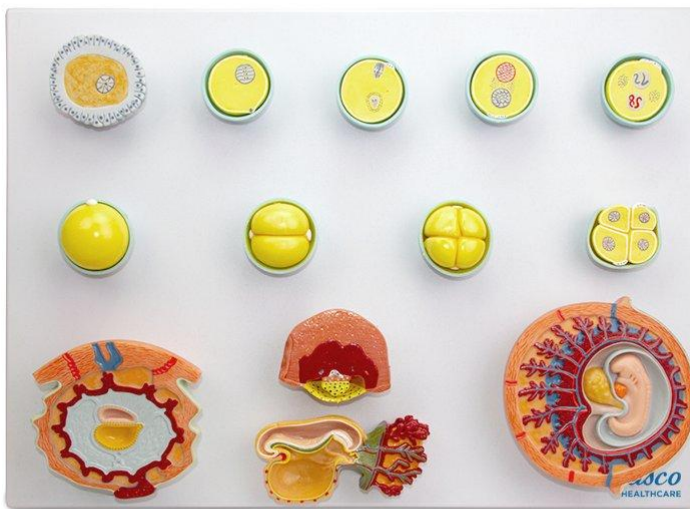




MG22605 | EMBRYONIC DEVELOPMENT, 13 STAGES







This detailed anatomical model represents 13 crucial stages of human embryonic development, from fertilization to the end of the fourth week of gestation. It offers an accurate visual representation of the main structures and transformations that occur during this critical period of development. The model is mounted on a base and features numbered, hand-painted parts for easy identification of structures.

Applications:

The model is ideal for the detailed study of human embryology, serving as an auxiliary tool in biology, medicine, nursing, and related courses. It is suitable for training, classroom demonstrations, and as a visual resource in scientific research related to embryonic development.

Technical Advantages:

- * Precise and detailed representation of the 13 stages of embryonic development.
- * Numbered and hand-painted parts for easy identification of structures.
- * Manufactured from stable and resistant synthetic material, with resin approved in toxicological tests.
- * High anatomical fidelity natural molding.
- * Includes an information card with related structures.
- * Original replicas, enlarged from natural size.
- * Model mounted on a polymer base.

3D Technology and Augmented Reality:

Our anatomical models offer a visual complement through information cards that activate 3D models viewable in augmented reality (AR). This interactive platform assists learning, allowing for comparative analysis of anatomical structures and offering resources for continuing education in anatomy, physiology, and pathophysiology.

Technical Specifications:

- * Material: Synthetic resin.
- * Scale: Enlarged from natural size.
- * Numbering: Manual.
- * Painting: Manual.

Main Structures:



Ovum: The ovum, or secondary oocyte, is the female sex cell, containing the haploid genetic material necessary for the formation of the zygote after fertilization. It presents structures such as the zona pellucida, corona radiata, and cytoplasm.

Sperm Entry: Sperm penetration occurs through the zona pellucida, involving the interaction between proteins on the sperm surface and receptors in the zona pellucida. The fertilization membrane forms after sperm entry, preventing the entry of others.

Formation of Polar Body II: After sperm penetration, the ovum completes the second meiotic division, generating the mature ovum and the second polar body, a small cell containing dispensable genetic material.

Approximation of Pronuclei: The male and female pronuclei, containing the haploid genomes of the sperm and ovum, respectively, migrate towards each other within the ovum's cytoplasm.

Union of Pronuclei (Karyogamy): The pronuclei fuse, combining the paternal and maternal genetic material to form the diploid nucleus of the zygote.

16-cell Stage - Morula (72 hours): The morula is a solid mass of 16 cells, resulting from successive cell divisions (cleavages) of the zygote.

4-cell Stage - Cleavage (48 hours): Intermediate stage of cleavage, where the zygote divides into four embryonic cells.

2-cell Stage - Cleavage (36 hours): First division of the zygote, resulting in two embryonic cells.

Unicellular Stage - Cleavage (zygote): The zygote is the cell resulting from the union of the sperm and ovum, containing the complete diploid genome.

Human Embryo at 15 days: At this stage, the embryo already presents the amniotic cavity, the yolk sac, and the bilaminar embryonic disc.

Implanted Blastocyst - Implantation (7 to 14 days): The blastocyst, a structure formed by the cellular differentiation of the morula, implants itself in the uterine wall, initiating the implantation process. It presents the inner cell mass, which will give rise to the embryo, and the trophoblast, which will form the placenta.

Other structures can be verified directly on the physical piece or on the interactive 3D model.

About the Anatomical Models:



They are developed with resin replication technology, meeting the need for anatomical pieces for teaching and research. They present the essential morphological characteristics with excellent cost-benefit, resistance, manual painting, and numbering for precise identification of structures.

List of all visible structures:

- Ovum
- Sperm entry
- Formation of polocyte II
- Approximation of pronuclei
- Union of pronuclei (Karyogamy)
- 16-cell stage - Morula (72 hours)
- 4-cell stage - cleavage (48 hours)
- 2-cell stage - cleavage (36 hours)
- Unicellular stage - cleavage (zygote)
- Human embryo at 15 days
- Implanted blastocyst - implantation (7 to 14 days)
- Longitudinal section at the end of 3 weeks
- Human embryo at 1 month