

# Garbhposhan “*Snehan evm Swedan Nyaya*” W.S.R. Fetal Nutrition

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**Abstract:** Ayurveda is the most ancient system of life science it is well known. All the text of Ayurveda are so much rich with its own terminologies and researches which are elaborated in modern era with different terminology. Two theories regarding nutrition of developing fetus is given in Sushrut and Charak Sharir Sthan eg. Snehan Nyaya and Swedan Nyaya. These theories of nutrition elaborate pre implantation and after implantation nutrition of zygote. As Snehan & Swedan are the process in which indirectly exchange of nutritive substances occurs between the fetus and mother. Before implantation developing zygote fulfill its nutritional requirement with the food storage in itself and partially by the secretion of uterine glands that is *matraswatantrata*. After formation of placenta nutrition and gaseous exchange occurs through the placenta that is *matrapartantrata*. In both stages of nutrition there is a barrier between mother and developing fetus which is crossed by the nutritive material and gases by the two nyaya mentioned above. Chark used the term *Nishyandan* means the process of exchange the nutrition and gaseous substances through the placental barrier. Old Nyayas mentioned in ancient text is accurate analysis of process by which nutrition is provided to the developing fetus. In modern embryology these methods of nutrition are found accurate as there is no direct relation between mother and fetal blood stream.

**Keywords:** Garbhposhan , Matraswatantrata, Snehan Nyay , Swedan Nyay , Placental Barrier

## 1. Introduction

Developing zygote required more nutrition because it has multiple divisions and maturation of cells to form full embryo. In initial stage it fulfills nutritional requirement with the store food in itself in the form of yolk sac it is call independency from mother [1]. But as it rapidly grows by the multiplication of cells it requires excessive nutrition that is provided by mother in the form of uterine milk eg. Secretion of uterine glands before implantation and by placenta after implantation that is the stage of dependency on mother [2]. In both stages of nutrition taken by mother there is no direct communication between mother and developing zygote but it is through the barriers. These barriers are zonapellucida and endothelial lining of the fetal vessels in corresponding stages. These barriers having some microspores through which these nutritious material and gaseous exchange take place by the selectively permeable [3] method according to the theory of osmosis and diffusion. In Ayurveda texts two type theories mentioned in this context Snehan [4] and Swedan nyaya [5]. Acharya Sushrut indicates to Snehan nyaya but Acharya Charak indicates to the both nyaya.

## 2. Material and method

**Material:** Charak Sharir sthan, Shushrut Sharir Sthan, Vagbhatt Sharir Sthan, and other Ayurvedic texts where Garbhposhan is described in detail.

**Method:** Ancient nyaya Snehan and Swedan has to be elaborate according to modern theory of Nutrition by placenta. Some other theories like diffusion, osmosis, selective permeable membrane is also incorporate in nutrition of fetus in support to ancient *Snehan & Swedan nyaya*.

## 3. Discussion

During fetal development initial nutritious requirement is fulfilled by the store food in zygote itself. After some time some secretions from the uterine wall & fallopian tube nourish the developing zygote i.e. uterine milk. after implantation placenta is the main source of nutrition for developing zygote. Method of nutrition for developing zygote in Ayurveda text is *snehan & swedan nyaya*. Mode of action of these two methods is to exchange of nutritious substances and gases between mother & fetus. Snehan which indicated by acharya shushruta means absorption of nutritive substances like the absorption of oil done on the skin through its microspores. Initially when developing starts some fluid from the uterine wall enters into zygote by the microspores of zonapellucida and trophoblastic layer which helps in the nutrition of developing zygote and differentiation of inner cell mass [6]. This method of absorption supports to the snehan nyaya. There is another theory of selective permeable membrane theory which permits the selective fluid to enter in developing zygote for notorious requirement on the basis of diffusion. microspores of the outer layers of the developing zygote function as selective permeable membranes which allows to the specific material to enter in the developing zygote to fulfill its nutritious requirements [7].

As per modern embryology after implantation the nutritious requirement of fetus is fulfilled by mother in any stage it supports ancient theory dependency on mother. Before implantation and after parturition fetus is not dependent on mother at all for the nutrition means *matrapartantrata* mentioned by *acharya charak*.

After implantation the main source of nutrition to the fetus is placenta. human placenta is hemochorial in which chorionic villies swims in the blood pools of sinusoids. From maternal blood to fetal blood nutritious substances and gaseous exchange occurs through placental barrier. at the end stage only, endothelium is the placental barrier from which this all

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exchange take place [8]. This method of transferring supports to the swedan nyaya of acharya charaka like sweating in our body through multiple pores of our skin [9]. Here all substance enters in fetal blood from the maternal blood via pores of endothelial layer on basis of osmosis.

Here two important mechanisms of transformation i.e. diffusion and osmosis support to the mechanism of nutrition which works on the basis of high concentration to low concentration flow of fluid and gaseous material [10].

Both method of nutrition mentioned in ancient texts are scientifically approved by the theories of exchange i.e. diffusion, osmosis, and selectively permeability. As human placenta is hemochorial placenta. So placental chorionic villi

swims in maternal blood pools. So nutritious substances are rich in maternal blood and waste products are more in fetal blood. So exchange of these substances and gases from high concentration to low concentration by the chorionic villi which act as selectively permeable membrane.

#### 4. Conclusion

Nutrition of fetus mentioned in ayurvedic texts before thousands of years i.e. *snehan and swedan nyaya* is great approach. It represents scientific approach of fetal nutrition in modern era starting to advance stage. *snehan nyaya* indicates to the early stage of nutrition while *swedan nyaya* indicates advance stage [11] of fetal nutrition.

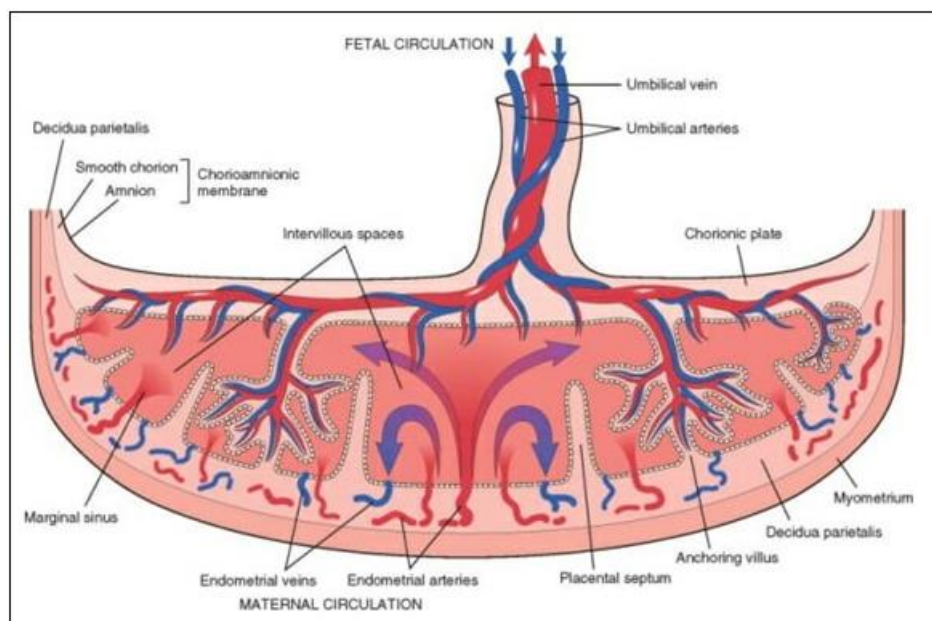


Diagram 1: Placenta

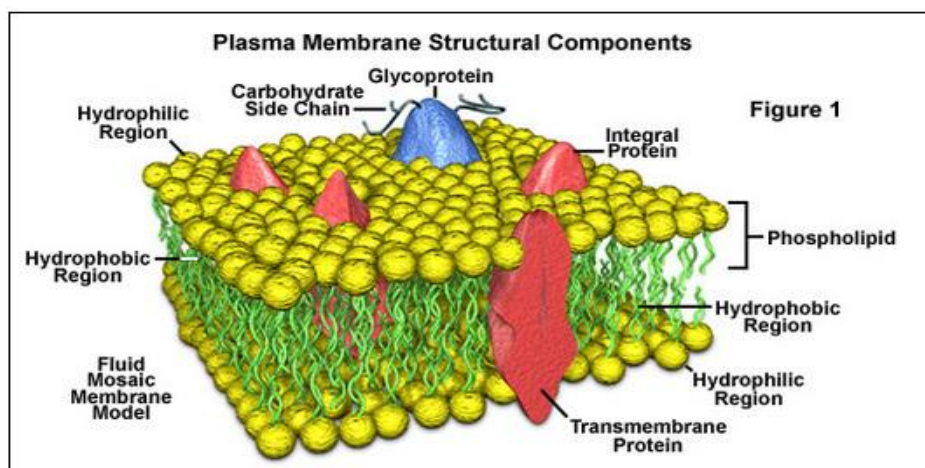


Diagram 2: Selective permeable membrane

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