

Skin Development

Skin, (lat. *cutis*), the largest organ body, has double origin :

- *superficial layer, epidermis*, arises from *ectoderm*;
- *deep layer, dermis (corium)*, develops from the **mesenchyme** lying below the ectoderm.

Included skin they are also derivatives of the epidermis arising during prenatal development. Adnexa are divided into *corner* and *glandular*.

Epidermis

First is the developing embryo covered once layer flattened cells. Later skin passes through stage which _ lead to a thickening of the epidermis. In the beginning the second months with this one epithelium will divide on external layer flattened cells which _ forming the **periderm** and the **germinative basal layer**. The periderm undergoes keratinization, exfoliate and participate in formation of "vernix caseosa" (*oil on surface bodies germ which prevents maceration amniotic liquid*).

Cells basal layers proliferate and on at the end of the 4th month they give arise to the final 4-layer arrangement.

The definitive epidermis consists of :

1. **stratum basale**;
2. **stratum spinosum**';
3. **stratum granulosum**;
4. **stratum corneum**'.

The stratum basale is responsible for the formation new ones cells, while the stratum corneum consists of dying ones keratinized cells which make up resistant the surface of the epidermis. In thick type skin we find between the stratum spinosum and stratum granulosum still the stratum lucidum *layer*.

In the later embryonic period the epidermis is settled cells coming from **neural strips**. They differentiate into **melanocytes** which still before by birth they start produce melanin and distribute him to the epidermal cells in the epidermis and in hair follicle. With this way they are skin and horn adnexa pigmented.

Colonize the epidermis also next cell populations – **Langerhans cells of the monocyto - macrophage system which they come from mesoderm and Merkel cells**.

Dermis

It develops from mesenchyme, which has origin in **dermatomes** somites, **mesoderm lateral plates** and from the **ectomesenchyme** which settles facial region of the embryo. This layer creates **dermal papillae** which they extend into the nad her deposited epidermis. Papillae contain sensitive ending nervous cells and small capillaries. Under this one layer is differentiated **stratum reticulare**, containing amount elastic and collagen fibers.

located under the dermis fatty tissue, **tella subcutaneous**. Amount subcutaneous however, the fat is up to the 6th month development minimal, that's why the fruit is strong red color with visible shining through blood vessels.

Vernix caseosa

Vernix caseosa protects forming skin _ before continuous by the action of amniotic liquids containing fetal urine, in addition makes it easier birth the fetus that is thanks sebum slippery. Vernix is as well mentioned in connection with his possible antibacterial effect.

Vernix caseosa is made up of :

- peeled off cells periderm ;
- *lanugem*, primordial pubic hair fetus, which in the later development falls away ;
- secretory skin gland.

Appears on surface bodies approximately in the twentieth week development.

Hair

They grow from the vagina, which arose by invagination of the epidermis into the dermis (joint). The longest hair they are hair. At the end hair the vagina is formed hair bulb, **bulbus pili**, and the **dermal** is immersed in it **papilla** which contains blood vessels and nerves ending. *Fusiform cells in the center hair follicle keratinize and form root hair while _ cells on the periphery follicles they are cubic and form epithelial vagina roots hair, hair follicle* .

From the surroundings mesenchyme around follicles form **fibrous scabbard follicles**. He clings to her smooth muscle **musculus arrector pili**, derivative mesenchyme. Constant proliferation epithelial cells in the bulb hair pushes out hair direction up and to at the end of the 3rd month surface embryos they discover first hair in the area eyebrows and upper the lip. First pubic hair **lanugo** is decided still before birth and is replaced rougher hair growing from the original ones hair follicles. In the epithelium hair follicle arises bud passing into the surroundings mesenchyme. Cells this bud they create sebaceous gland, **glandula sebacea** which produces oil secreted into hair follicles and so on on Surface skin.

Milky gland

First hint creation milky gland appears in form lane thickened epidermis, **milky bar**. Seven weeks old the embryo in progress this bar from axillae until on internal side thighs. Larger part milky glands soon after hers emergence again disappears and hers small section on chest lingers on and on it proliferates deep into the mesenchyme. 16 to 24 epithelial cells are formed pins, from which arise small, solid buds. To end prenatal development epithelial pins they luminize and create **milk ducts, ducti lactiferi**, from the buds arise glandular lobes. From the beginning with the milk ducts they open until small epithelial dimples, but soon after birth this hole arching into the nipple.

Links

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- Physiology skin
- Skin transplant

External links

Vernix Caseosa - Wikipedia, the free encyclopedia (https://en.wikipedia.org/wiki/Vernix_caseosa)

Source

- SADLER, TW. *Langman's medical embryology : Translation 10th ed.* 1. Czech edition. Grada, 2011. pp. 414. ISBN 978-80-247-2640-3.

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