Pregnancy and the skin

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Conflict of Interest

- Novartis
- Society of dermatology PAs
- Sanofi
- AAPA
- Legal Consultant
- Galderma

Race is a social construct and is distinct from ethnicity, genetic ancestry, or biology.

There is more genetic variation within races than between races

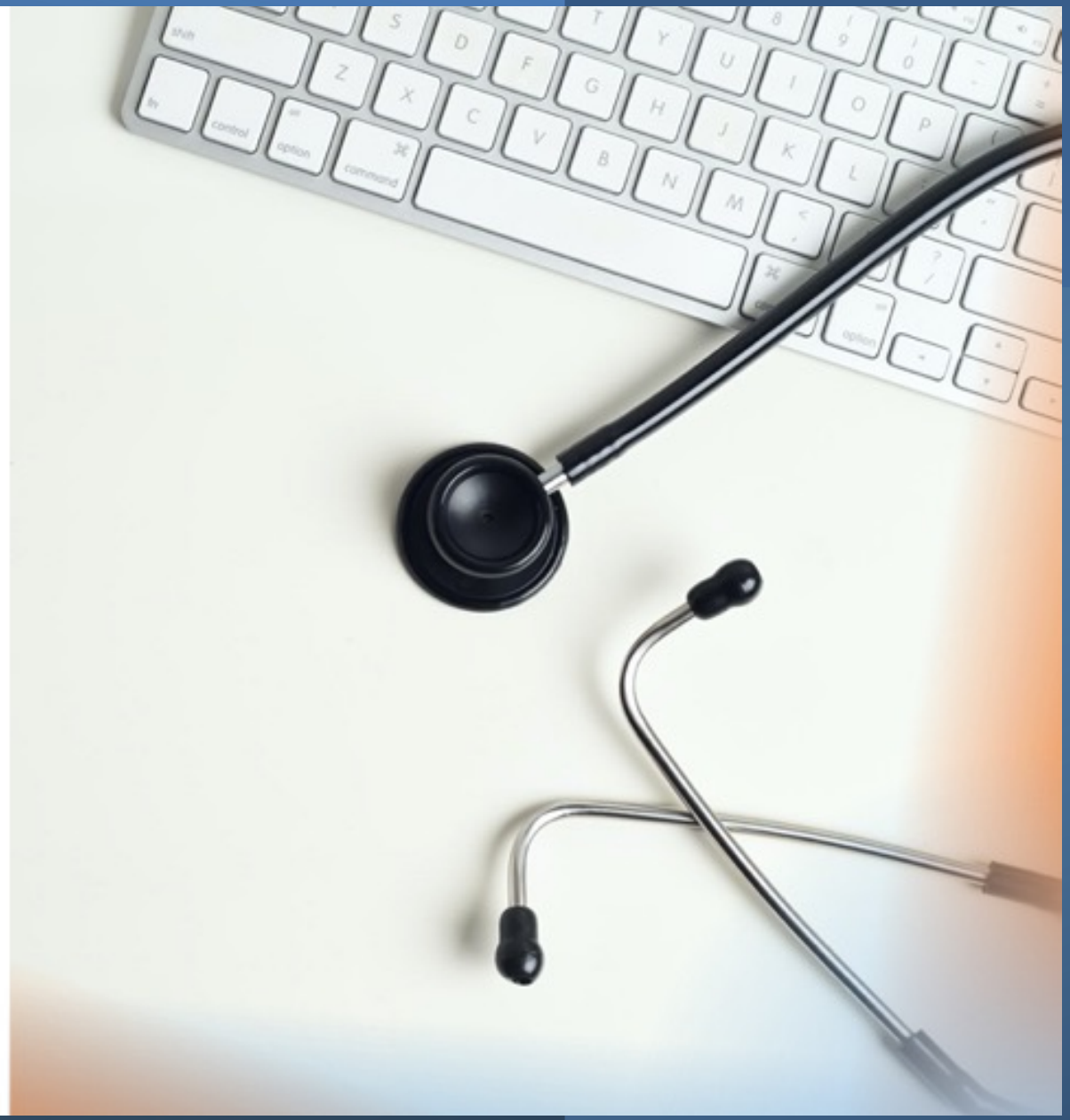
National Human Genome Research Institute

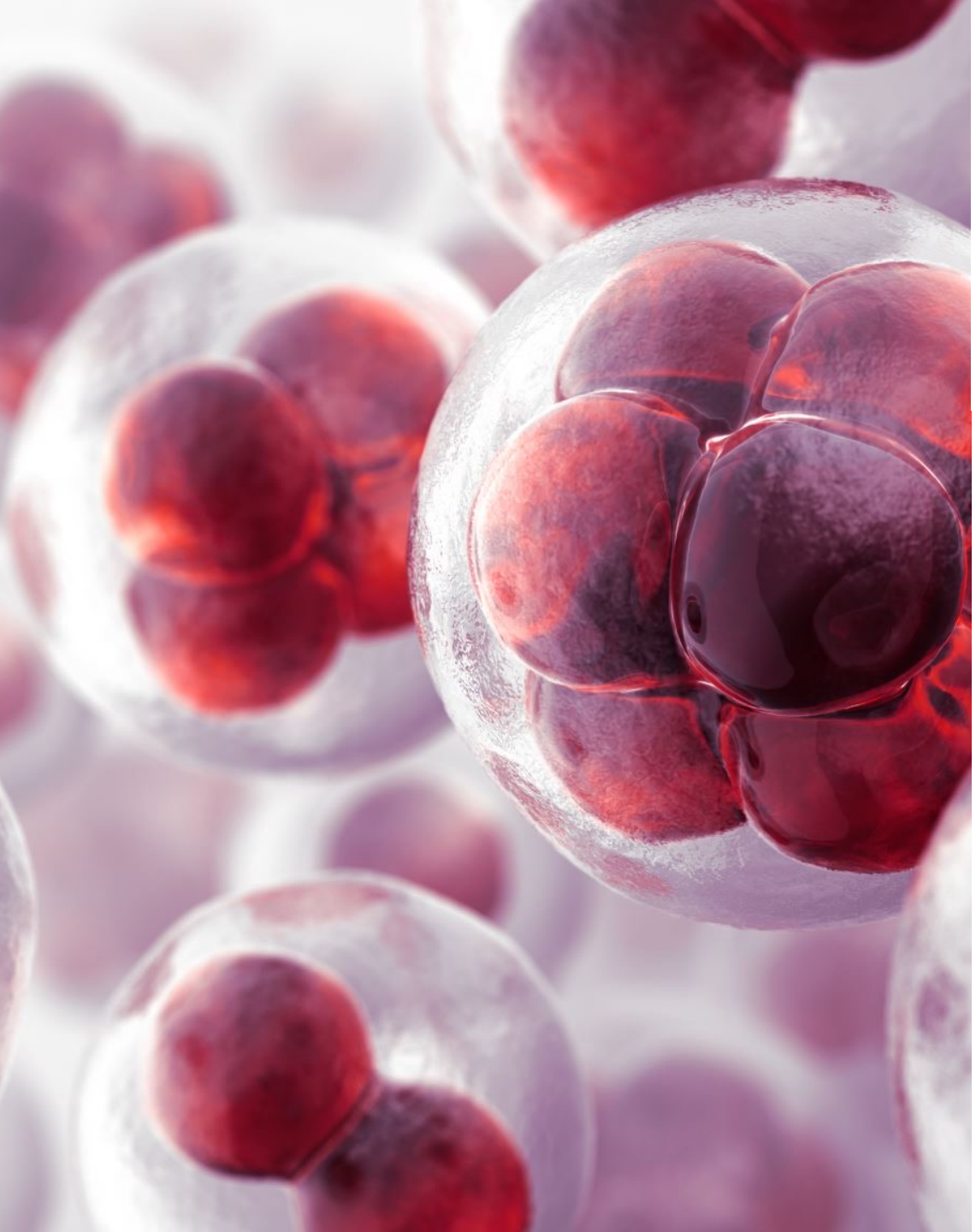
Rather than abandoning the use of race in medicine, we believe we should transform the way it is used, embracing a more rigorous, multidisciplinary, and evidence-based understanding of how race, racism, and race-based science contribute to inequities in health and health care.

Amutah C et al. Misrepresenting Race — The Role of Medical Schools in Propagating Physician Bias. N Engl J Med. 2021; 384:872-878
DOI: 10.1056/NEJMms2025768

Objectives

- Physiologic skin changes of pregnancy
- Cutaneous diseases that are transmitted through the placental circulation
- Dangerous conditions of pregnancy
  - Intrahepatic cholestasis of pregnancy
  - Impetigo herpetiformis
- Conditions affected by pregnancy





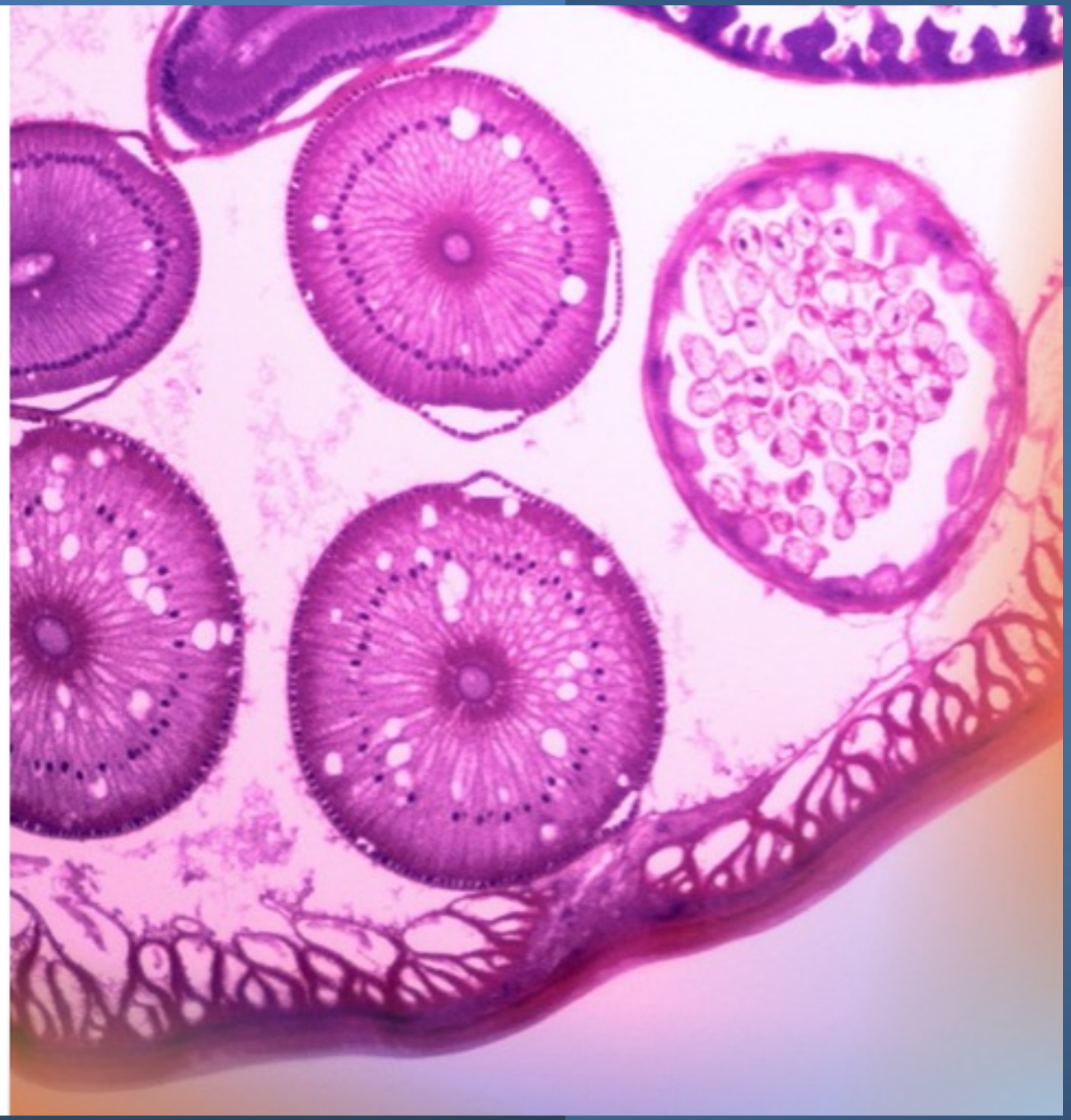
Profound Physiologic Changes of Gestation

- Immunologic
- Metabolic & Endocrine
- Vascular changes

These changes lead to physiologic and pathologic changes of the skin and its appendages.

Physiologic skin changes of pregnancy

- Pigmentation
- Hair, Nails
- Vascular
- Connective tissue
- Glandular
- Mucous membranes

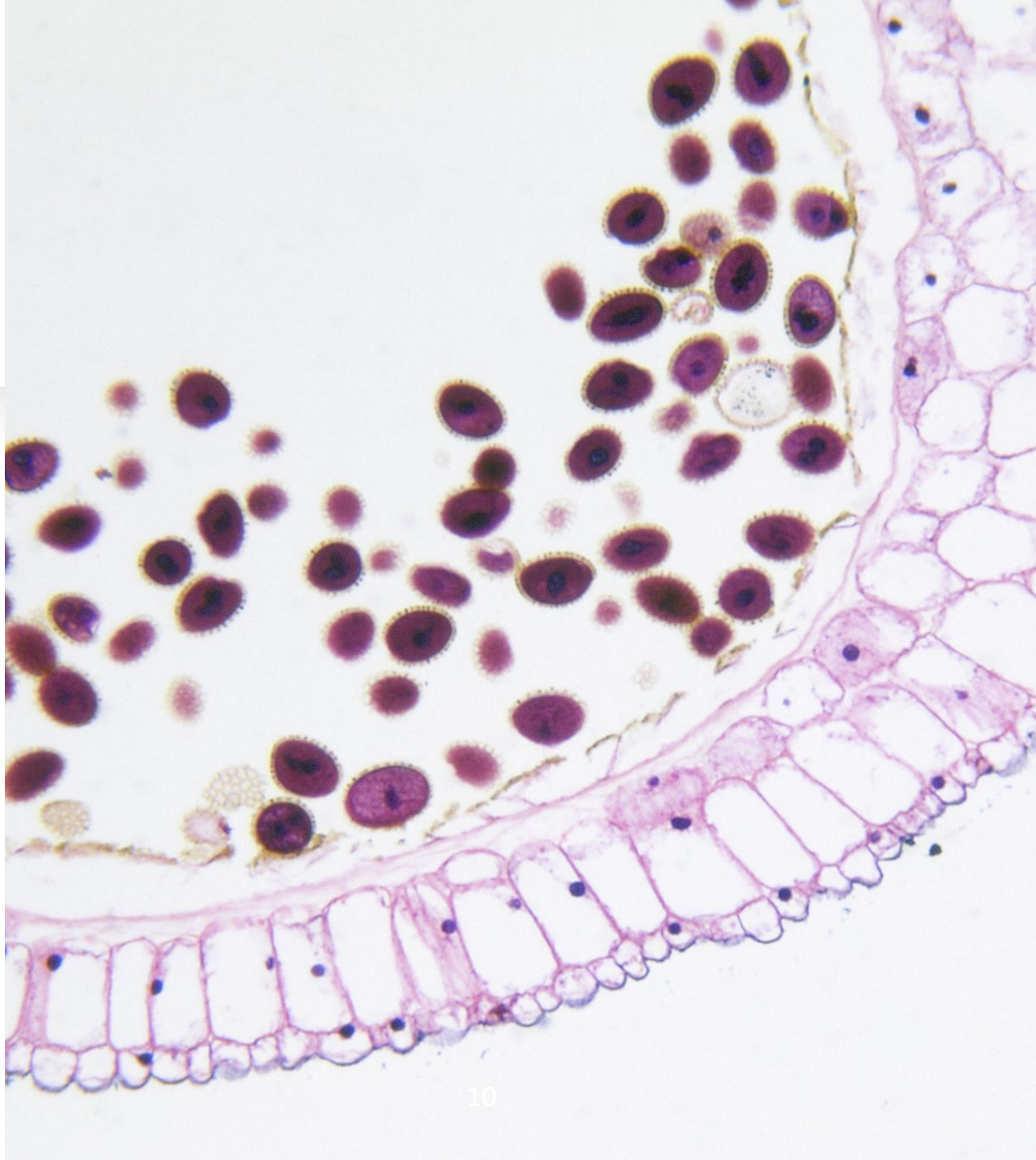


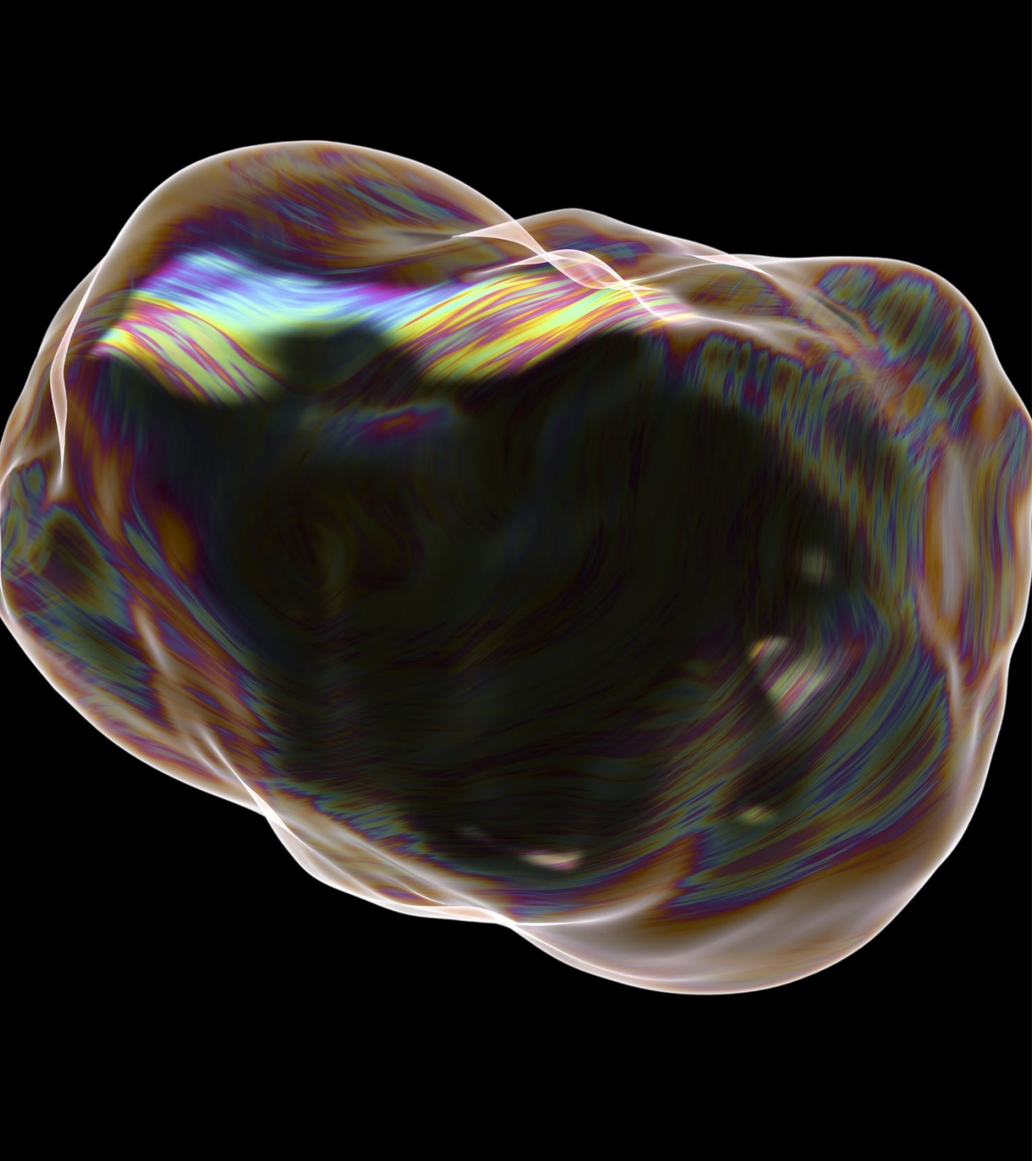
Pigmentary change

Accentuation of normally hyperpigmented areas such as the areolae, nipples, genital skin, axillae, and inner thighs, freckles, nevi, and scars occurs

Pathophysiology of Pigment in Pregnancy

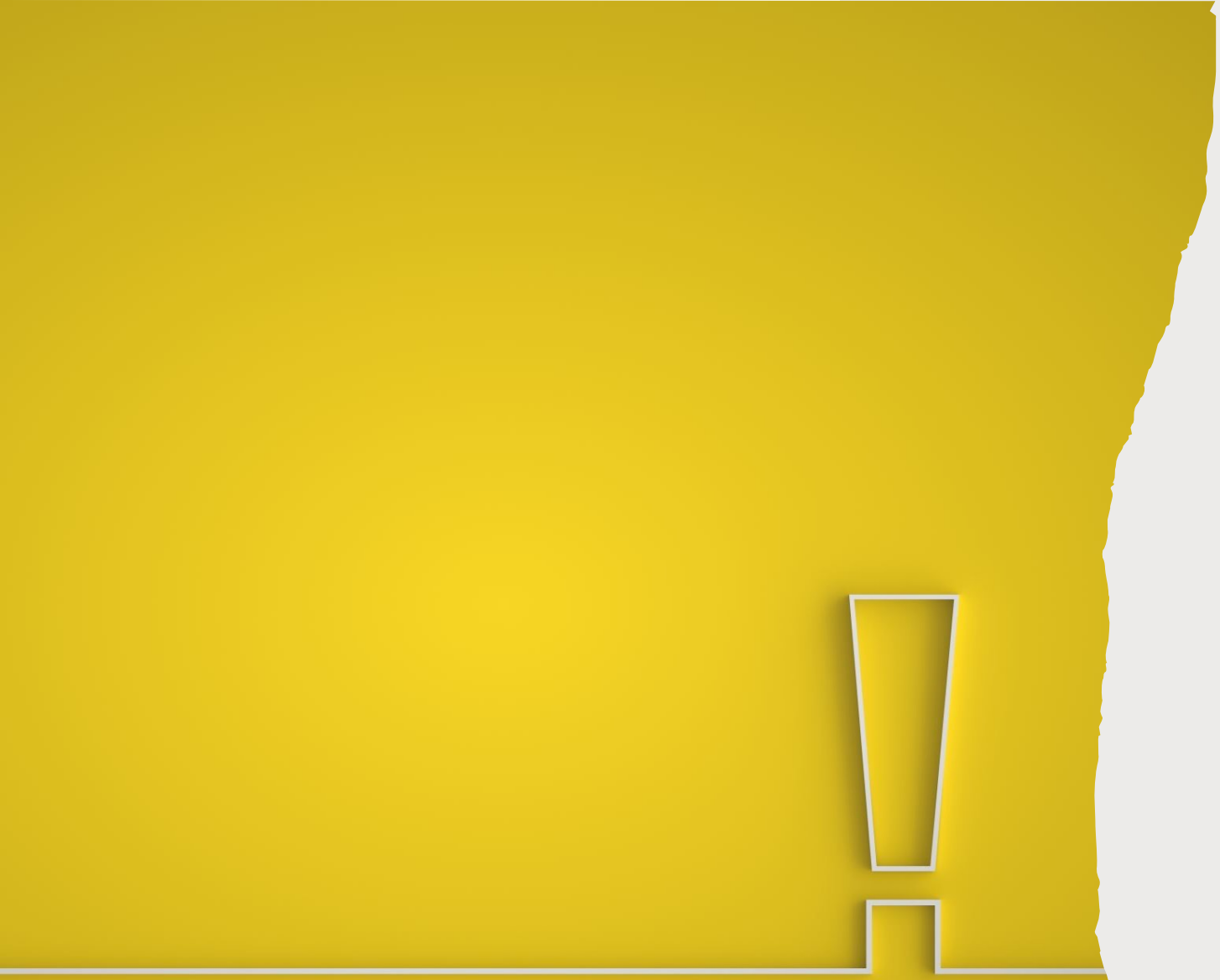
The physiology of hyperpigmentation may be related to elevated serum levels of melanocyte-stimulating hormone, estrogen, and possibly progesterone.





Excessive melanin deposition in the epidermis (70%), dermal macrophages (10%-15%), or both (20%) and can be clinically demonstrated by Wood's lamp examination.

This examination will show enhancement of color contrast if the excess melanin is located in the epidermis but no enhancement if melanin is located only in the dermis.



Ultraviolet and visible light may worsen melasma

Epidermal melasma is responsive to treatment, whereas the dermal type is more difficult to treat.

Sunscreen and proper patient education are critical for long-term success.

Topicals such as: hydroquinone, topical corticosteroids, and tretinoin are useful for persistent cases of epidermal melasma.

Hair changes

Telogen effluvium

Frontoparietal recession

Nail changes

- Nail
  - Transverse grooving, brittleness, distal onycholysis, subungal hyperkeratosis

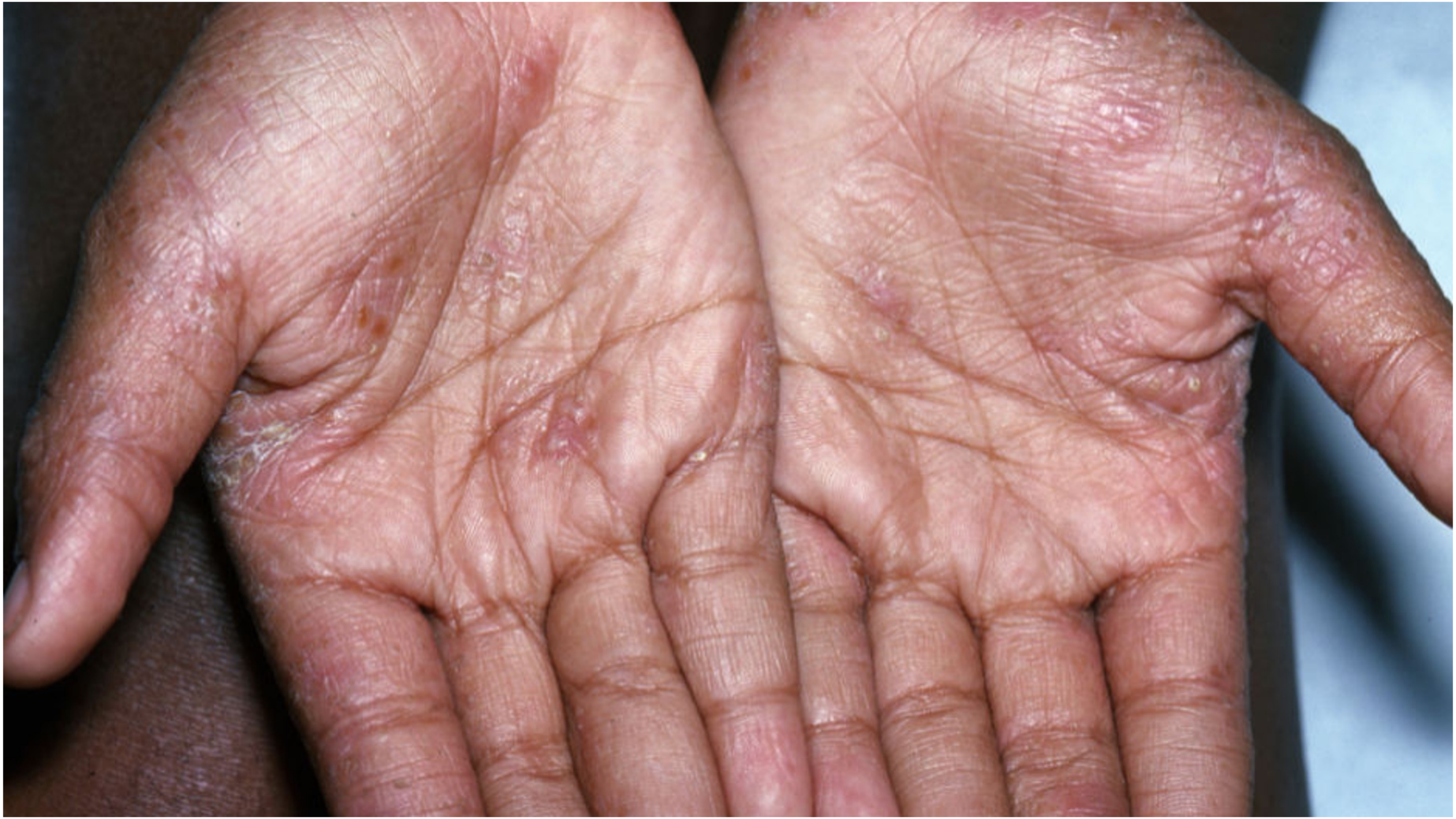
Endocrine changes of pregnancy regress within 6 months

Glandular function

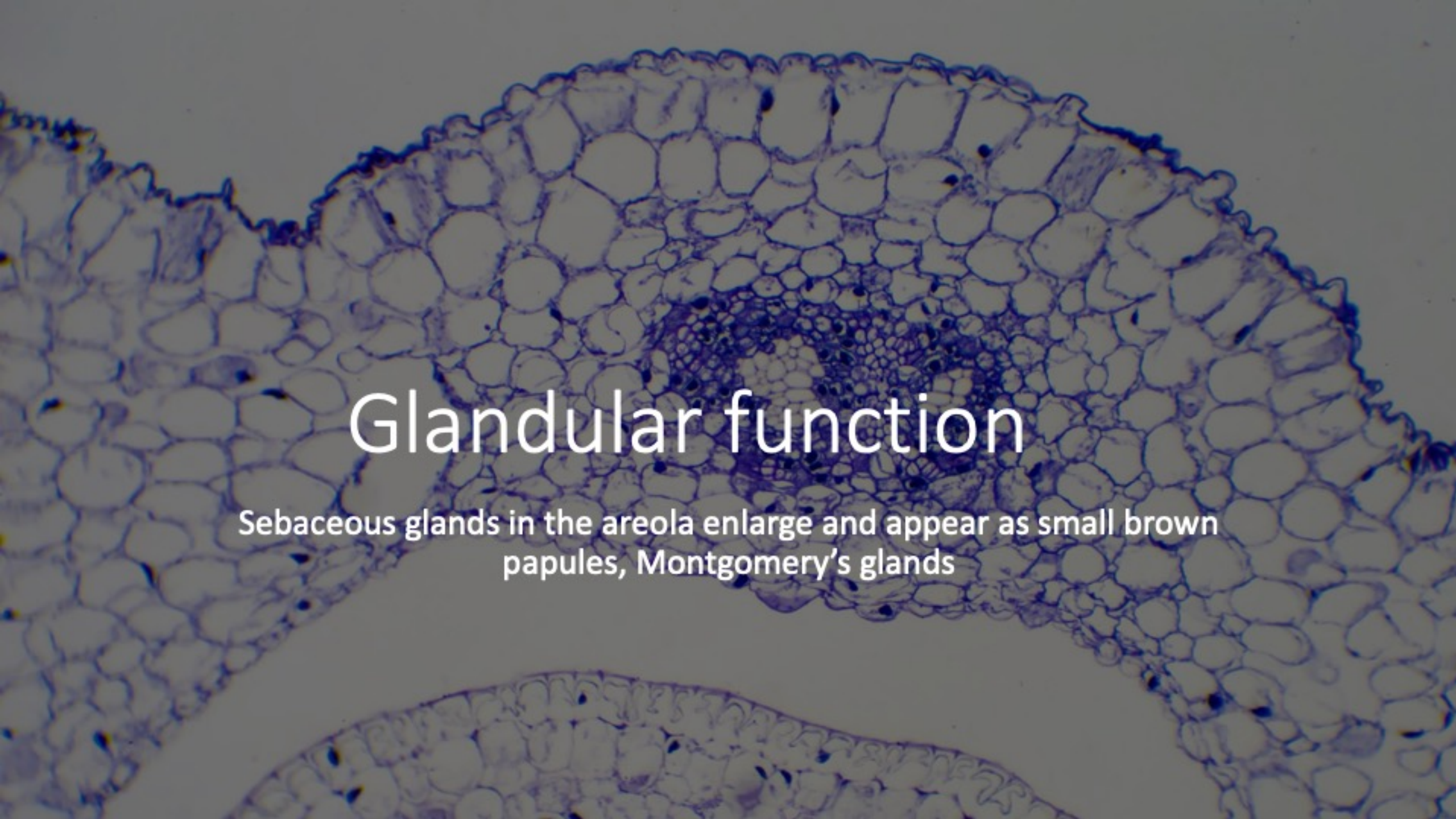
- Increase eccrine function
  - Except for palms
- Increase sebaceous function and decrease in apocrine function
  - Hidradenitis Suppurativa
- Increase incidence of
  - Miliaria
  - Hyperhidrosis
  - Dyshidrotic eczema

Conditions affected by pregnancy because of these glandular changes

- Atopic dermatitis
- Nipple dermatitis
- Hand Dermatitis
- Pruritus of pregnancy



Acne is unpredictable



Glandular function

Sebaceous glands in the areola enlarge and appear as small brown papules, Montgomery's glands

Connective tissue changes
Striae

- Atrophic bands on the abdomen, breast, thighs and inguinal folds
- Color changes postpartum make these less apparent

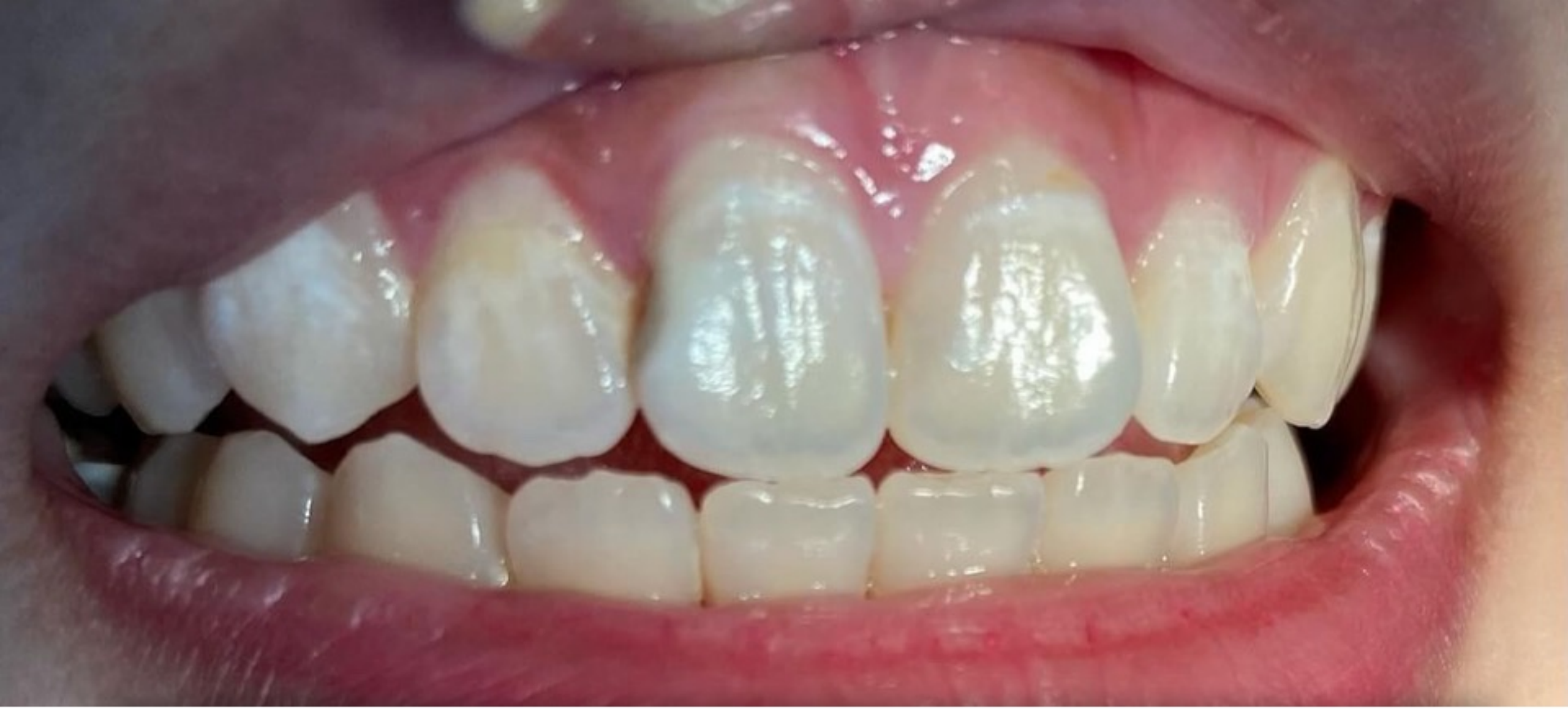


Photo: Aviyuda Prabowo, DDS

Mucous Membranes

Inflammation of the gums, Gingivitis

Infections

Increased incidence of certain infections in pregnancy has been attributed to immunosuppressive effects of high serum levels of estrogen

Infections

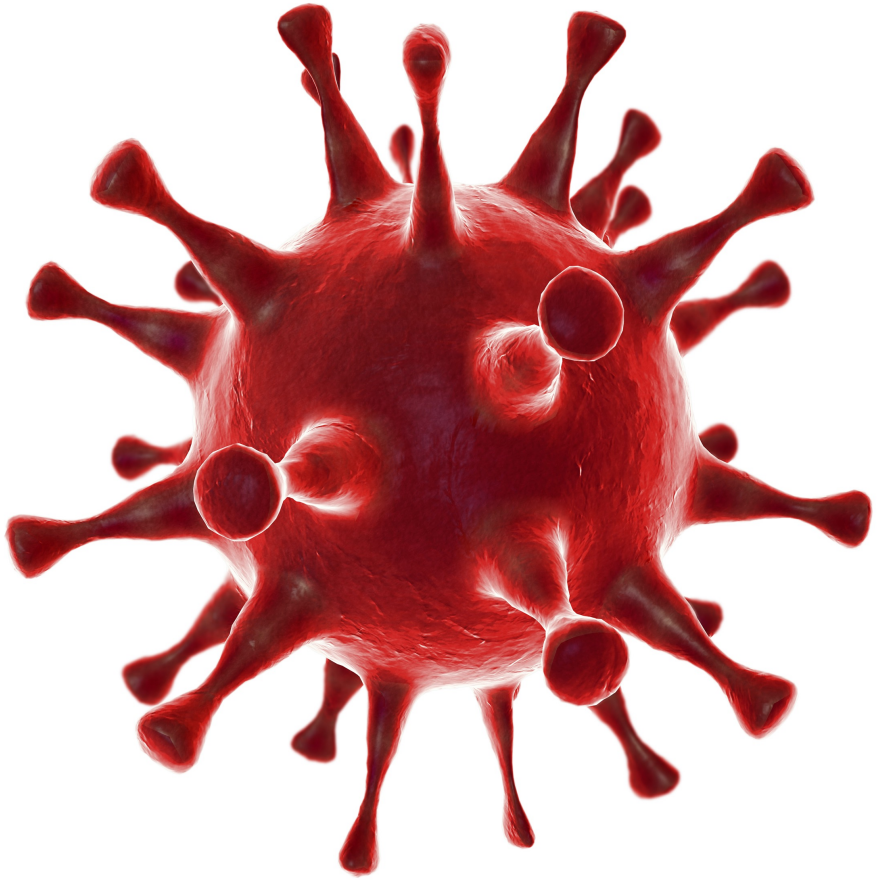
- Decrease in cell-mediated immunity, neutrophil function, and activity of natural killer cells, as well as impairment of local antibody responses.

- Candida vaginitis can be seen in up to 56% of pregnant people
  - can be cultured from up to 50% of neonates born to infected mothers.

- Trichomonas is seen in up to 60% of pregnant people
  - but has no adverse effects on the fetus.

Varicella

HIV



Herpes

Hepatitis B

Infections that are transmitted through the placental circulation

HIV

- Opportunistic infections have a high maternal mortality but the number of cases is too small to conclude that the death rate due to opportunistic infections is increased in pregnant people with AIDS.

- Increased maternal and fetal mortality, intrauterine growth retardation, prematurity, and a dysmorphic syndrome have been reported.
  - AIDS will develop in a high percentage of infants within 16 months of birth.

HSV

- Recurrent HSV not worsened by pregnancy… BUT it can cause fetal morbidity and mortality
- Transmission to neonate is 50% for primary infection and 5% for recurrent infection
  - Primary infection that occurs after 26th week is rare but may result in disseminated disease with a 50% mortality rate
- More than half of babies born to mothers with clinically noticeable lesion will develop a neonatal HSV infection
  - Significant number will have neurologic sequelae or die

Varicella (Chicken Pox)

Increases risk for serious complications	Pneumonia Death
If VZV is contracted in 1st or early 2nd trimester there is a small risk of baby being born with congenital varicella syndrome	Scarring of the skin, limb, brain and eye abnormalities, low birth weight
If VZV develops between 5 before to 2 days after delivery baby has risk of neonatal varicella	Mortality rate ~30% without VVZ Ig, is 7% with neonatal ICU & VZV Ig

Varicella (Chicken Pox)

- Varicella can be complicated by
  - Maternal pneumonia (14%)
  - Maternal death (3%)
  - Premature labor
  - Congenital varicella syndrome if the primary infection occurs during the first trimester

Hepatitis C

- Hepatitis C likelihood of viral particles passing through the placenta is low.
- This suggests that the transmission may occur through contact with blood during labor.

- Transmission to a fetus is more likely if the parent:
  - Has a high HCV viral load, has HIV, or uses intravenous drugs.

Acrodermatitis Enteropathica

- Flares as a result of low serum zinc levels in early gestation
  - If zinc stores were low before pregnancy, gestation uses them up
- Can get mistaken for impetigo herpetiformis or herpes gestationis
- Check a serum zinc if suspicious
  - Untreated can result in anencephaly, achondroplastic dwarfism, neonatal death

Impetigo Herpetiformis (Pustular Psoriasis)

- No prior hx of psoriasis
- 3rd trimester pregnancy, but can happen within first month
- Fever, malaise, delirium, diarrhea, vomiting, tetany,
- Presents with symmetric patches with grouped pustules at the margins that begin in the intertriginous areas and spread.
  - Can also involve mucosa including the esophagus and spare the face, hands and feet.
- Hypocalcemia, associated with low vitamin D
- Still births and fetal abnormalities

Pregnancy Dermatoses				
Condition	Clinical Findings	Onset, resolution	Fetal Risk	Treatment
Atopic eruption of pregnancy	Itchy papules	Onset: first or second trimester Resolution: 3 months post-partum	Increased likelihood of Atopic disease in infant	Emollients, topical corticosteroids, Phototherapy
Polymorphic eruption of pregnancy	Typically spares the umbilicus, Begins typically in the striae Bullae is rare, can have vesicles Most common (specific) eruption of pregnancy	Starts 3rd trimester typically of the first pregnancy	NONE Associated with multiple gestations and first pregnancies Recurrence with subsequent pregnancies is uncommon	Emollients, topical corticosteroids, Phototherapy
Pemphigoid gestationis	Blisters around umbilicus 1:50,000 pregnancies	Abrupt onset, third trimester or postpartum period Can worsen at delivery	Associated with premature birth, low birth weight, 10% of babies with bullae Recurrence common with subsequent pregnancies	Topical corticosteroids, oral corticosteroids in severe cases, fetal surveillance

Pregnancy Dermatoses				
Condition	Clinical Findings	Onset, resolution	Fetal Risk	Treatment
Intrahepatic cholestasis of pregnancy	Severe itching without primary skin lesions Increased serum bile acids and liver function tests	Onset: second or third trimester Resolves: 6 weeks postpartum	Preterm birth, intrapartum fetal distress, fetal demise	Ursodeoxycholic acid (ursodiol) Oral antihistamines, fetal surveillance, delivery at 36-37 weeks
Impetigo herpetiformis (Pustular Psoriasis)	fever, malaise, delirium, diarrhea, vomiting, tetany, CP symmetric patches with grouped pustules at the margins, start in intertriginous areas and extend. Can in involve mucosa including the esophagus and spare the face, hands and feet.	Onset: third trimester pregnancy, but can happen within first month	still births and fetal abnormalities	Systemic steroids, Cyclosporine, Infliximab Phototherapy, Fetal surveillance

Pemphigoid gestationis	Polymorphic eruption of pregnancy
Subepidermal blister DIF will show C3 deposition in a linear band at the basement membrane zone, IDIF will show salt split skin deposition on the epidermal component like Bullous pemphigoid	No specific DIF or IDIF but you can do these to rule out PG ←
Starts at umbilicus	Typically spares the umbilicus, Begins typically in the striae
Typically with bullae	Bullae is rare, can have vesicles
1:50,000 pregnancies	Most common (specific) eruption of pregnancy
Presents in the 3rd trimester or postpartum period, abrut onset	Starts 3rd trimester typically of the first pregnancy
Worsens at delivery	Resolves at delivery
Associated with premature birth, low birth weight, 10% of babies with bullae Recurrence common with subsequent pregnancies	Associated with multiple gestations and first pregnancies Recurrence with subsequent pregnancies is uncommon

Conditions affected by pregnancy because of these glandular changes

- Atopic dermatitis
- Nipple dermatitis
- Hand Dermatitis
- Pruritus of pregnancy

Psoriasis in Pregnancy

40% to 63% of pregnant people with psoriasis improve during pregnancy, whereas only 14% worsen.

This may be attributed to the high levels of interleukin 10 in pregnancy

- cytokine which has a favorable effect on the course of the disease

Psoriasis in Pregnancy and Beyond

- Increased levels of estrogen and progesterone may play a role in immune tolerance by:
  - Stimulates B cell mediated immunity and suppresses T cell mediated immunity
- PsA develops in 30-45% pregnant people postpartum or perimenopausal

Conditions affected by pregnancy

- Acne - Worsened
- Hidradenitis Suppurativa - Improved
  - Activity of Apocrine glands decrease during pregnancy

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Questions and discussion