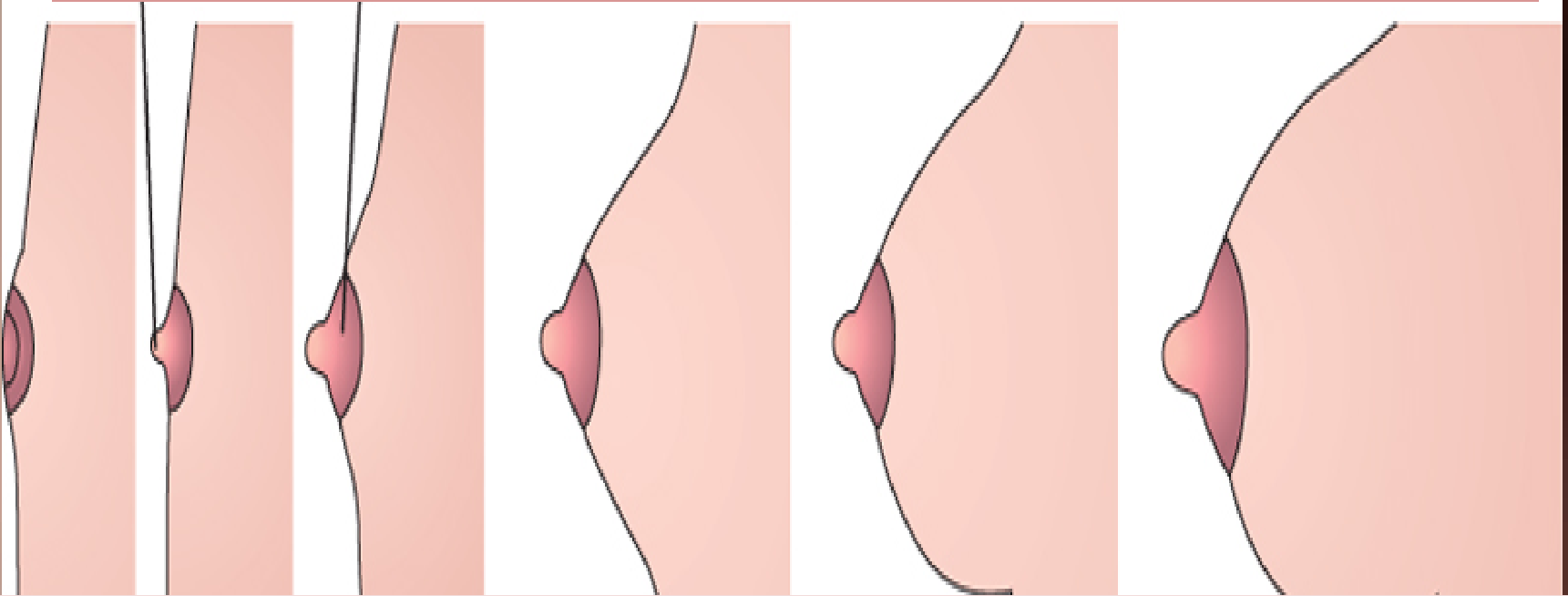


female breasts paediatric to geriatric an overview



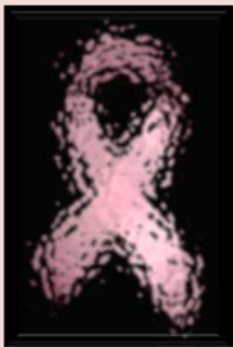
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Jaideep Malhotra

Neharika Malhotra Bora

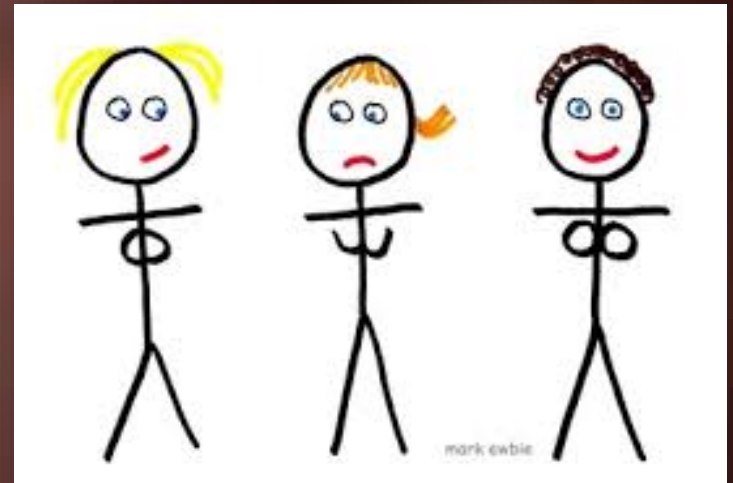
mnmhagra3@gmail.com

GLOBAL RAINBOW HEALTH CARE, AGRA



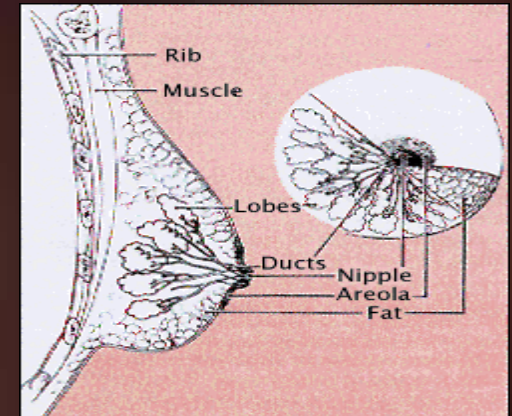
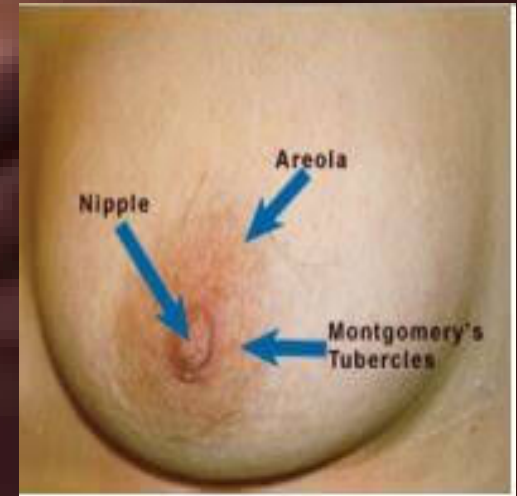
INTRODUCTION

- Mammary Glands exist in both sexes.
- Rudimentary in males throughout life
- Start developing at puberty
- Most of the development occurs during later months of pregnancy and lactation



Anatomy and Physiology— Breast

- Areola
- Montgomery's tubercles
- Lobes
- Lobules
- Alveoli or acini
- Lymphatic drainage
 - Axillary nodes: central, pectoral, subscapular, lateral
 - Internal mammary chain



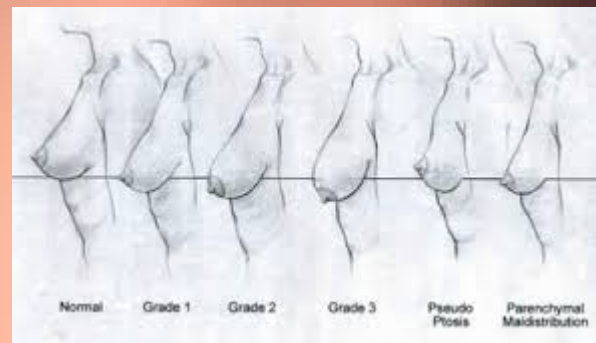
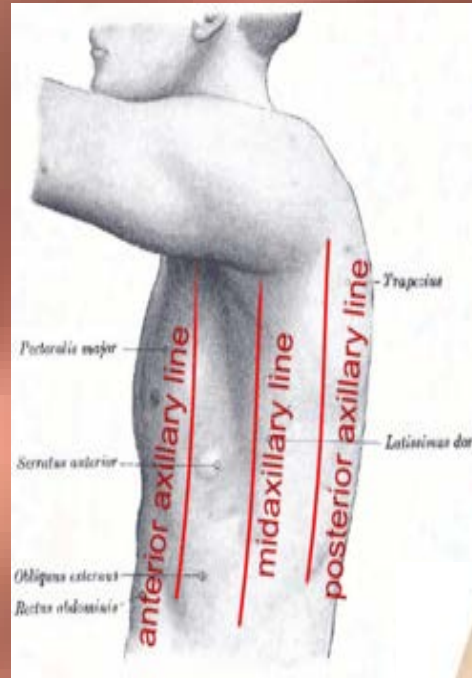
Anatomy and Physiology— Breast

- Function: milk production and sexual pleasure
- Tail of Spence
- Cooper's ligaments
- Nipple
- Lactiferous ducts



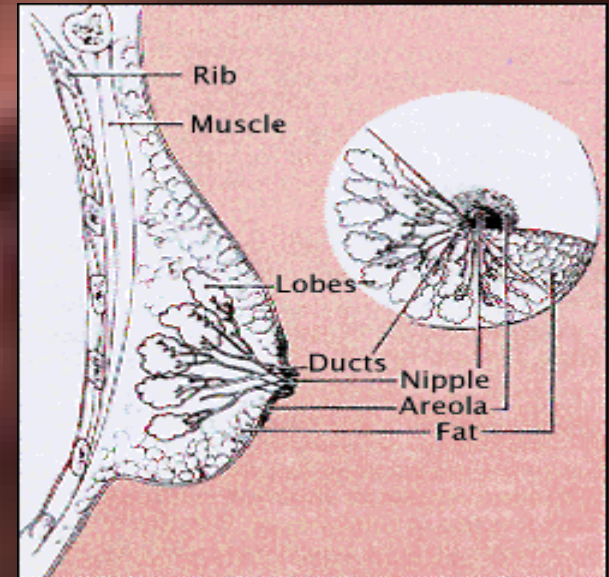
SHAPE AND EXTENT

- Rounded eminence lying within superficial fascia anterior to upper thorax
- Extends from 2nd to 6th rib and at 4th costal cartilage extends from parasternal region to midaxillary line

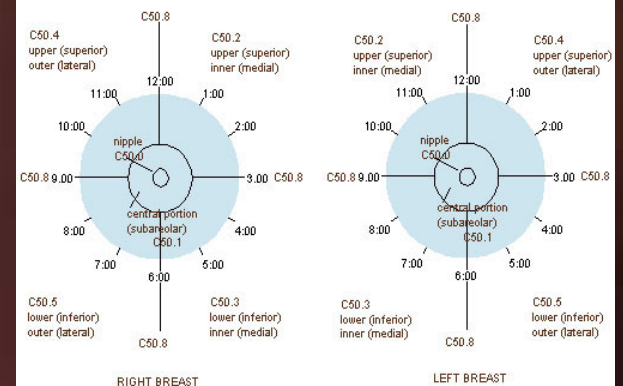


Breast Anatomy


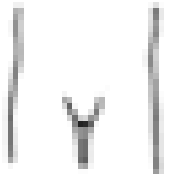

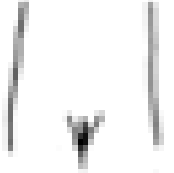

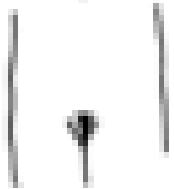
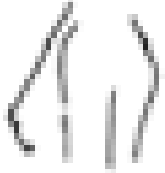
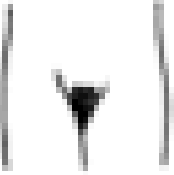

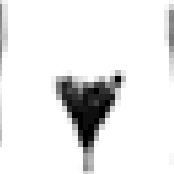
- Breast contains 15-20 lobes
- Fat covers the lobes and shapes the breast
- Lobules fill each lobe
- Sacs at the end of lobules produce milk
- Ducts deliver milk to the nipple



Breast Clock and Quadrants



BREASTS AT ALL AGES

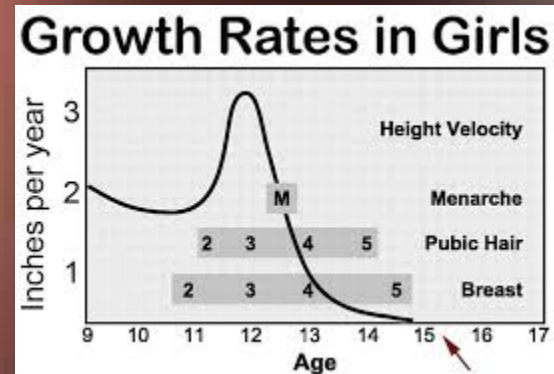
| | | | | |
|------------------|---|---|---|-------------------|
| PREPUBERTAL |  | 1 |  | PREPUBERTAL |
| BREAST BUD |  | 2 |  | PRESEXUAL HAIR |
| BREAST ELEVATION |  | 3 |  | SEXUAL HAIR |
| AREOLAR MOUND |  | 4 |  | MID-ESCUTCHEON |
| ADULT CONTOUR |  | 5 |  | FEMALE ESCUTCHEON |



Breast Development

- Mammogenesis is the term use to describe the development of the mammary gland.
- The mammary gland is one of a few tissues in mammals, which can repeatedly undergo growth, functional differentiation, and regression.

Usually begins at 10 to 11 years of age
Stimulated by estrogen release during puberty

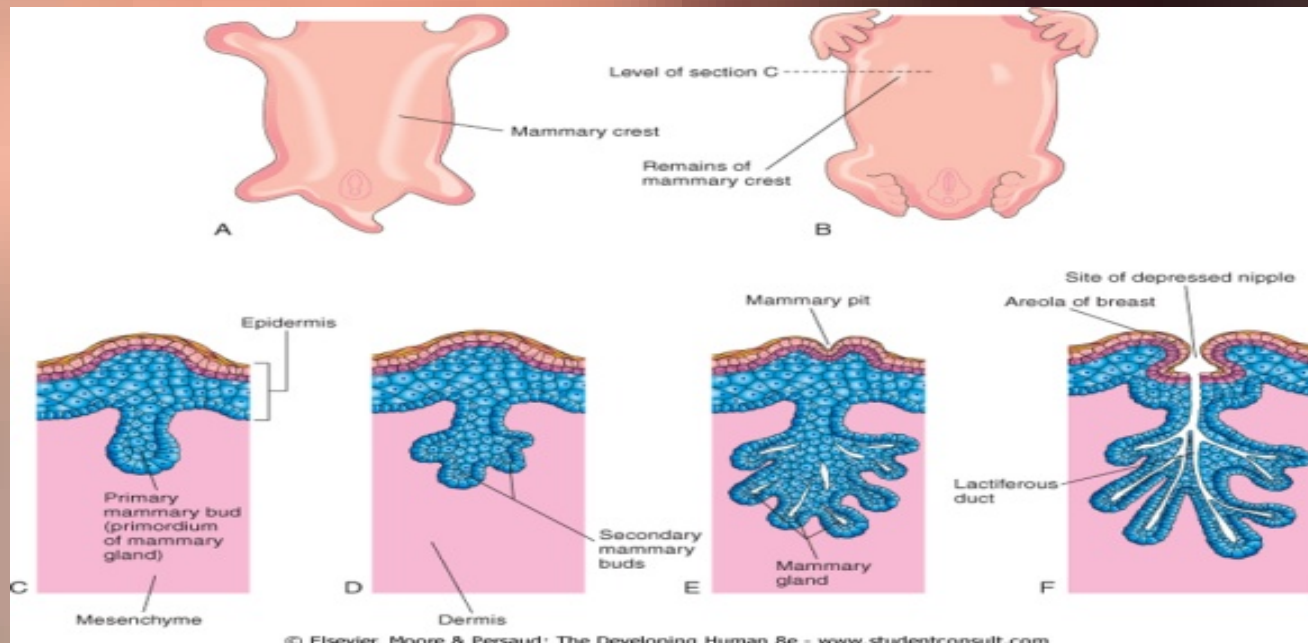


Development of Mammary Glands

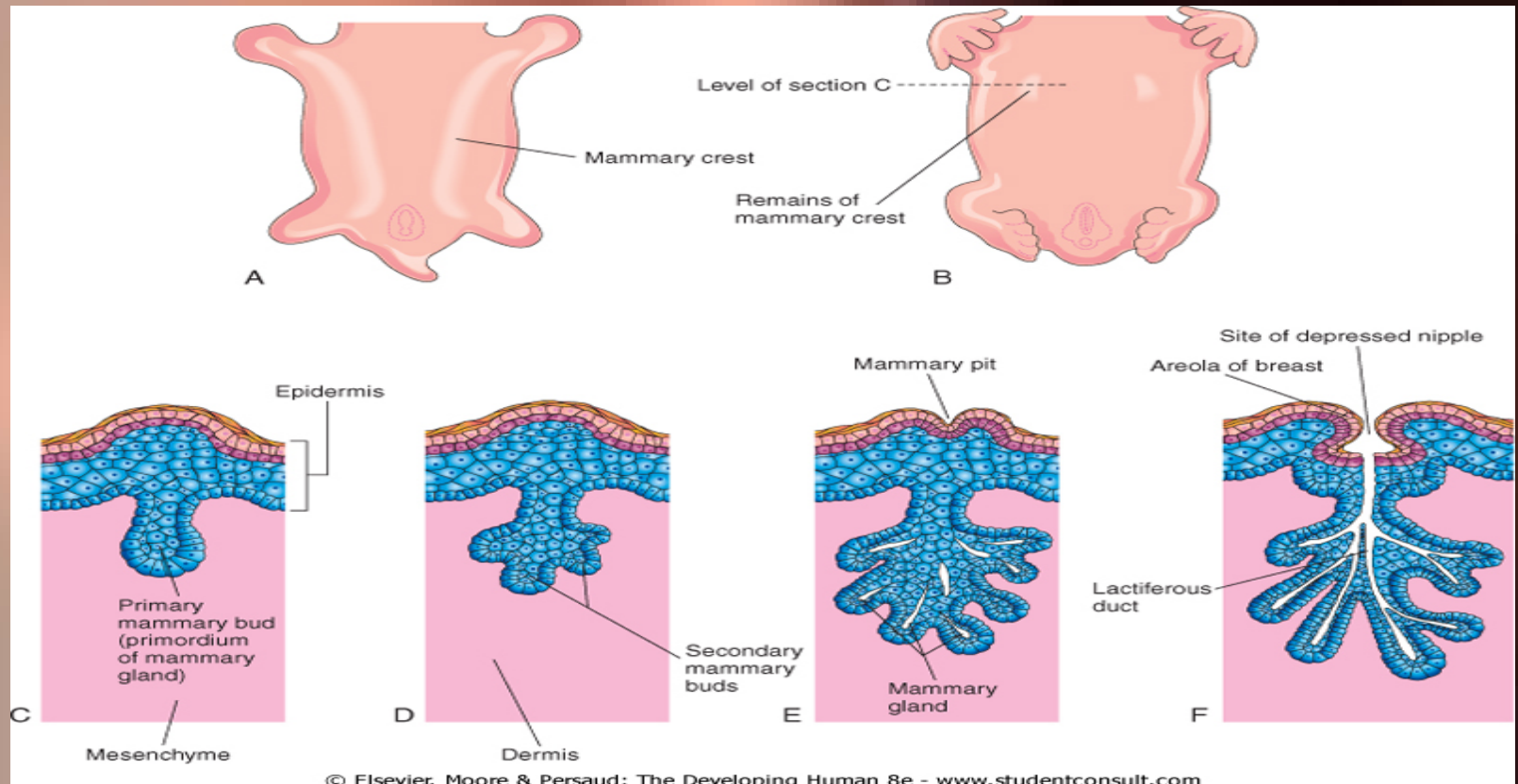
- Are a modified and highly specialized type of apocrine sweat glands.
- Consist of *parenchyma*, which is formed from ducts, and connective tissue *stroma*.
- Parenchyma derives embryonically from *surface ectoderm*; stroma arises from surrounding *mesenchyme*.



- Mammary buds begin to develop during the sixth week as solid downgrowths of the epidermis into the underlying mesenchyme
- These changes occur in response to an inductive influence from the mesenchyme

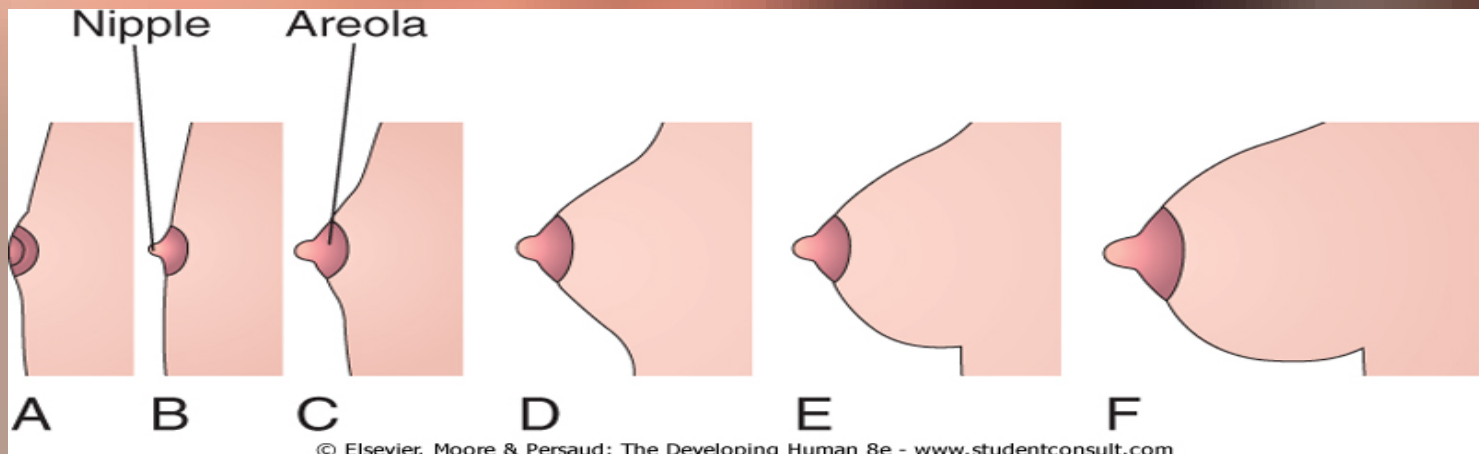


- Mammary buds develop as down growths from thickened mammary crests, which are thickened strips of ectoderm extending from the axillary to the inguinal regions



Development of Nipples and Areola

- During the late fetal period, the epidermis at the site of origin of the mammary gland becomes depressed, forming a shallow **mammary pit**
- The nipples are poorly formed and depressed in newborn infants.
- Soon after birth, the **nipples** usually rise from the mammary pits because of proliferation of the surrounding connective tissue of the **areola**, the circular area of skin around the nipple.
- The smooth muscle fibers of the nipple and areola differentiate from surrounding mesenchymal cells.



Postnatal Development

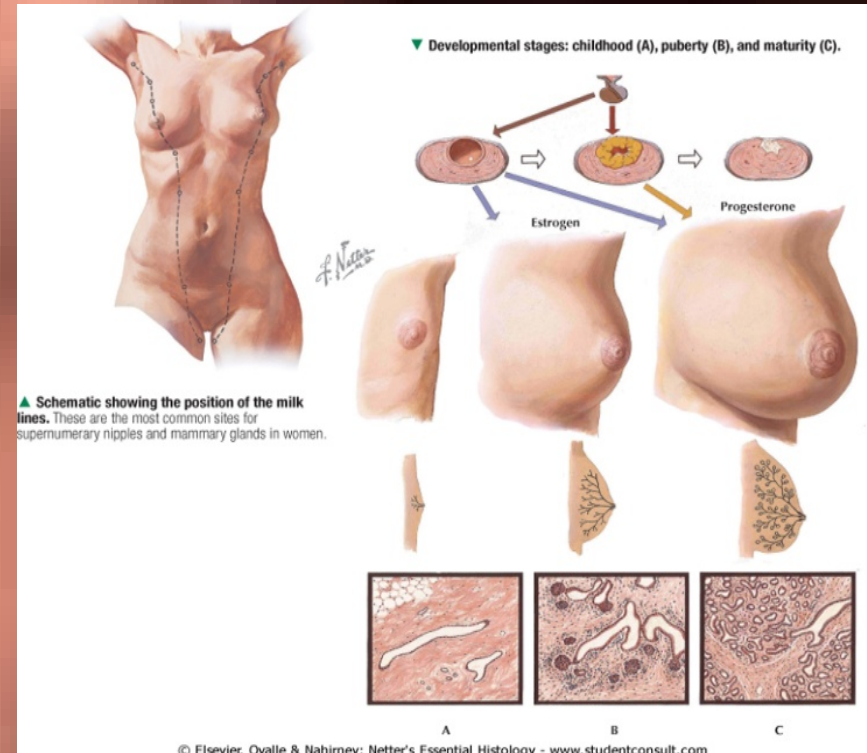
- The rudimentary mammary glands of newborn males and females are identical and are often enlarged.

Develop in the same manner and are of the same structure in both sexes until puberty,

At puberty changes in the hormonal secretions in females cause further development and structural changes within the glands.

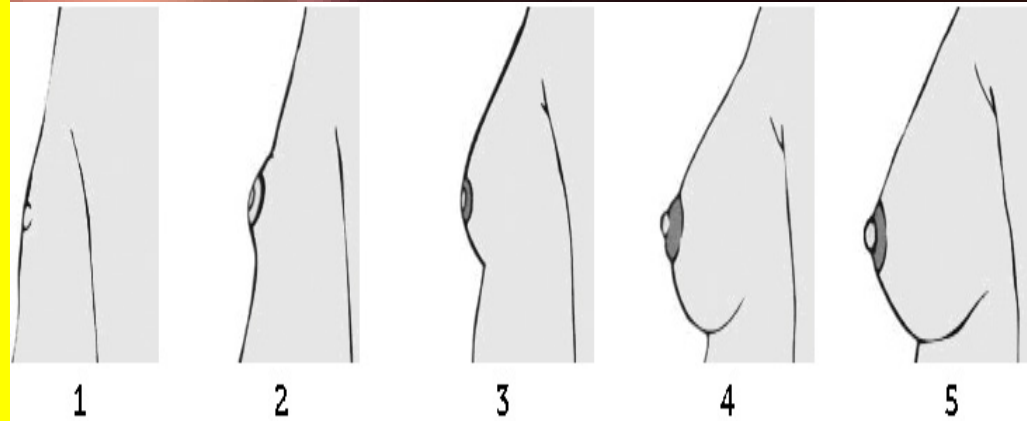
Secretions of estrogen and progesterone from the ovaries (and later from the placenta) and prolactin from the acidophils of the anterior pituitary gland initiate development of lobules and terminal ductules.

Full development of the ductal portion of the breast requires glucocorticoids and further activation by somatotropin.



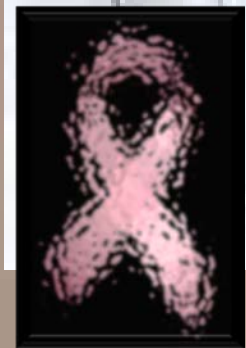
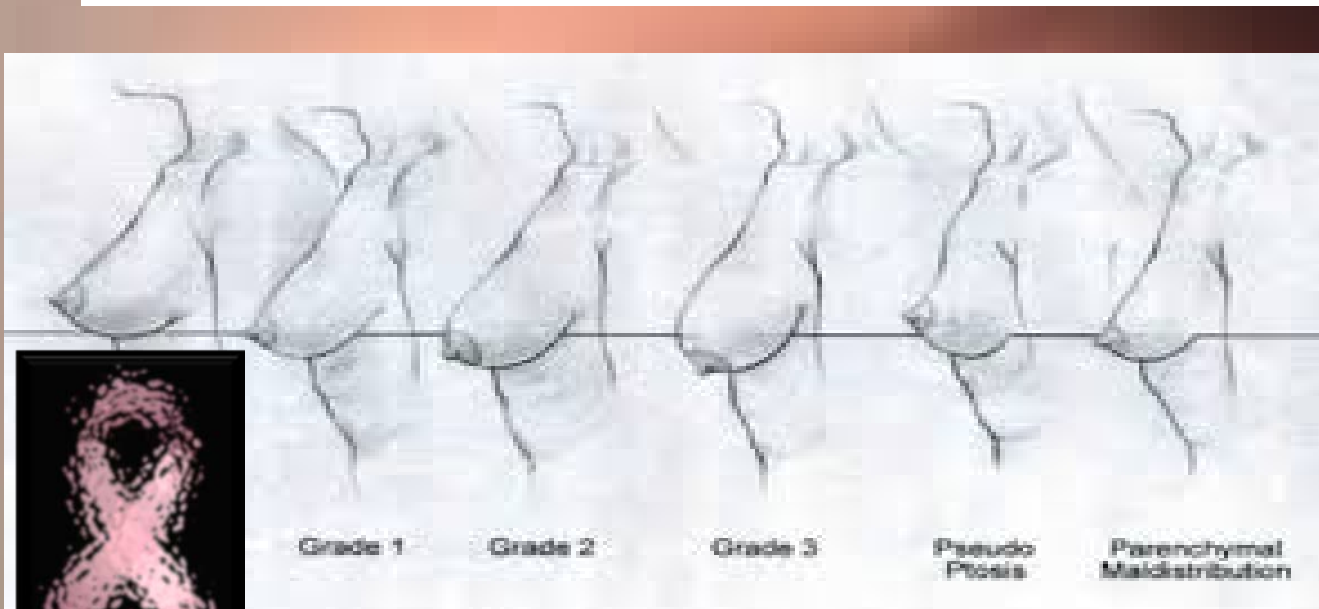
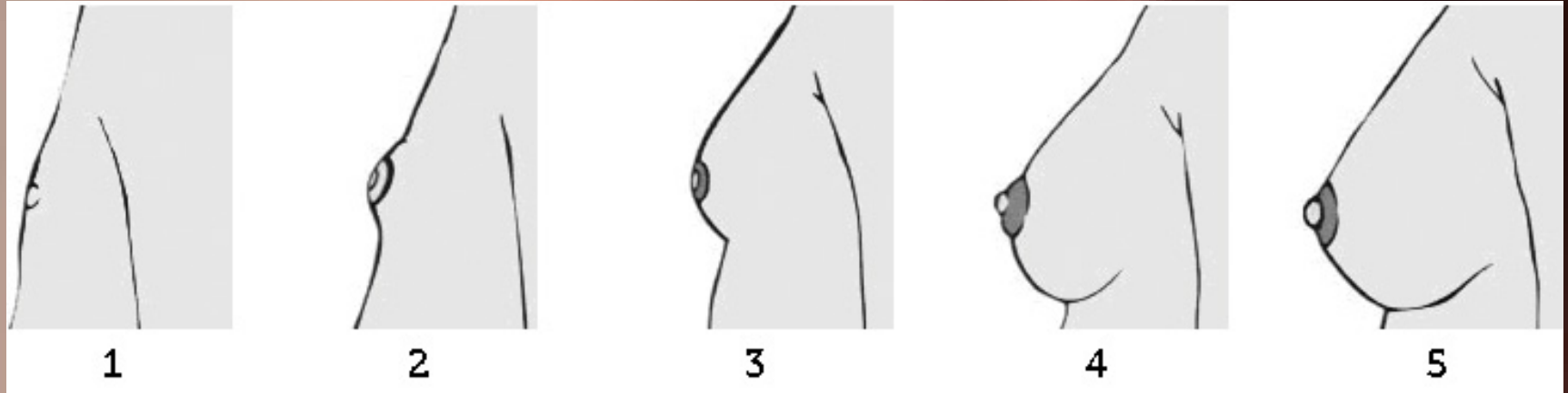
Stages of Breast Development

- breast growth is a step by step developmental processes and not some sudden change
- Development of breast is a process that happens throughout the life of a female.
- In medical terminology, the process of development is called mammogenesis.
- This process starts way before a female is born i.e. from the womb of the mother up until menopause in adulthood.



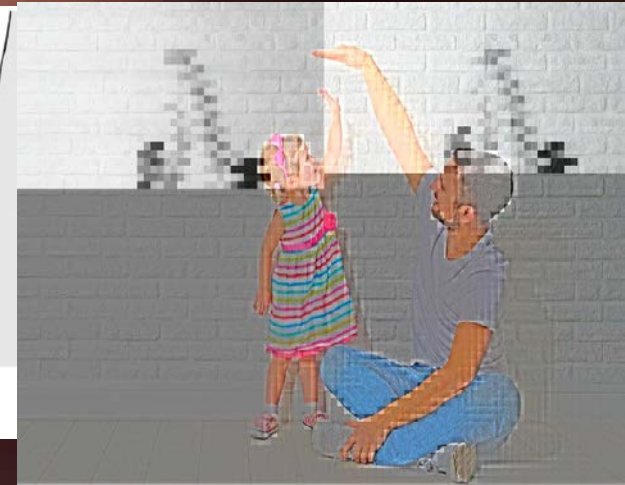
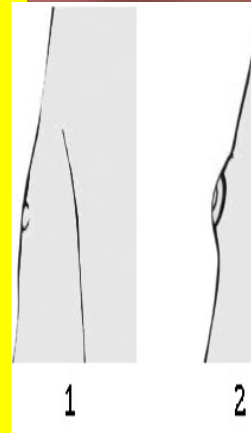
What Is Normal Breast Development?

PAEDIATRIC TO GERIATRIC



PAEDIATRIC

- Breast buds start to occur around nine to ten years of age and is the first sign of puberty.
- These breast buds continue to undergo different developmental stages that result in formation of normal healthy breasts.
- Disturbances in these developmental stages along with the disturbance in hormones that contribute in breast formation can be alarming and needs to be consulted with the doctor.
- However, if there is a long delay for stage I of breast development then girl should really see a doctor.
- Likewise, visible changes in the size and shape of breasts in the mature period should also be taken seriously and proper advice and treatments should be sought.

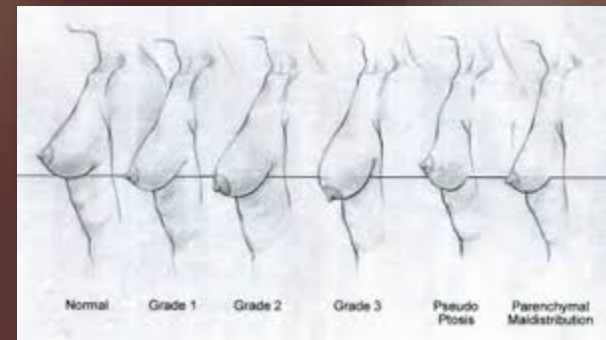
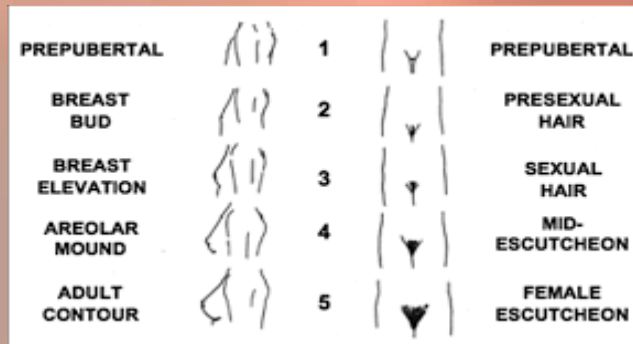


Training
**What Age Do Girls
Stop Growing?**



Phases of Breast Development

TANNER has suggested a stage wise classification of breast development from paediatric to adulthood



TANNER Stage I:



It's the preadolescent phase.

The nipples or papilla start elevating above the level of chest wall at this stage.

Though there is no formation of breast tissues in this stage and the breasts remain flat.

This stage is mostly seen in 8 to 13 years old but basically it depends on the personal genetic makeup of the individual.

Also factors like diet and health play an important role at this developmental stage.



TANNER Stage II:



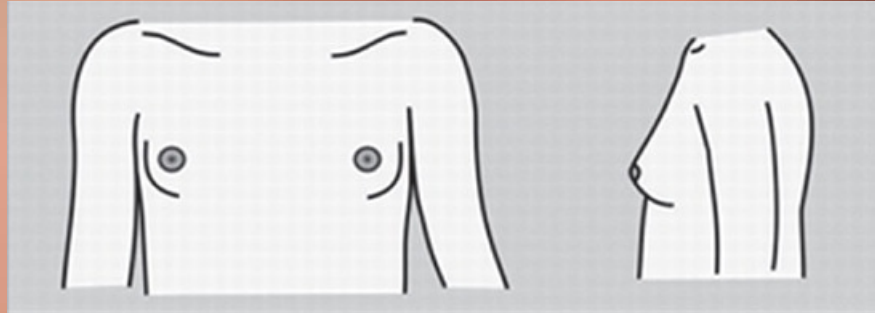
At this breast developmental stage generally the milk ducts and fat tissues start to rise.

These growth changes cause the breast wall to elevate a little along with budding of nipples.

There will be very slight difference apparently but tenderness and pain upon a subtle touch can mark the presence of this stage of budding.

A small bud like breast is formed at this stage

TANNER Stage III:

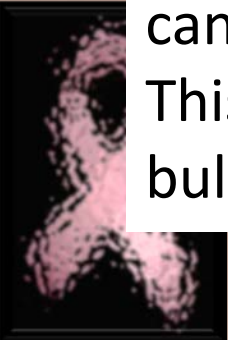


It's a pre-pubertal stage.

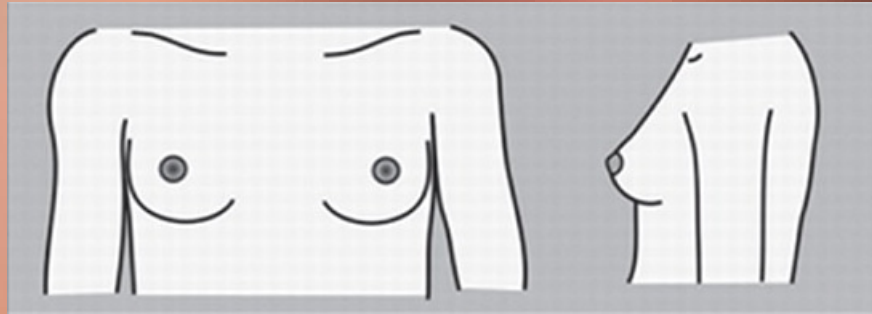
At this stage breasts become ready to allow changes of puberty phase to take their course.

The fat tissues start to get bigger and form an initial conical shape of breasts which later transforms into a rounder shape. Well there are still no contours and no projection of nipples. However, the area of areola starts to darken and puffiness can be seen.

This stage is marked by the appearance of small breasts like bulging on the chest wall.



TANNER Stage IV:



This developmental stage of breasts signifies the onset of puberty.

The nipples and areola start to project and proper breast contours are formed.

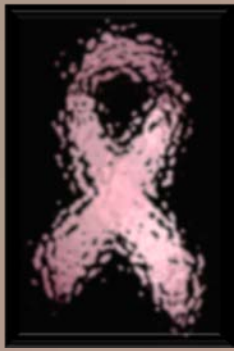
This change is mainly conducted by “estrogen” hormone.

Estrogen calls forth fat tissues to grow and accumulate in the breast area along with the milk ducts.

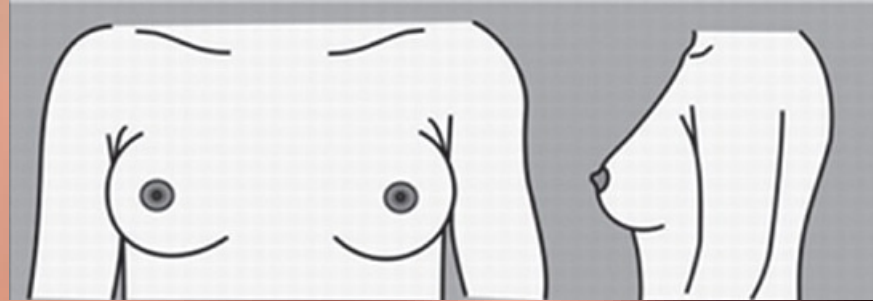
Hormone “progesterone” is also released at this stage when a girl starts menstruating.

Progesterone is released by ovaries and plays an important role in the contouring and milk production, since it’s responsible for milk production.

Though it doesn’t cause breasts to increase in size but it does play a role in shaping and firming the pubertal breasts at this stage by producing milk via milk glands.



TANNER Stage V:



The developmental process of breasts take 3 to 5 years from first stage to the pubertal years of development, even for some women it might take around 10 years.

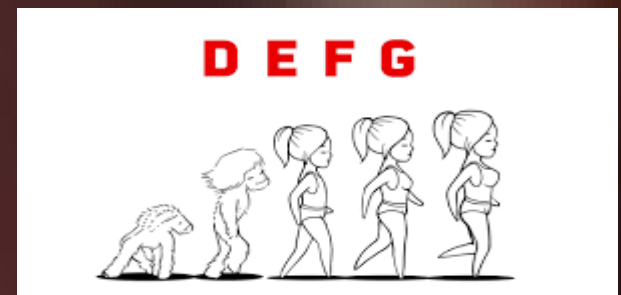
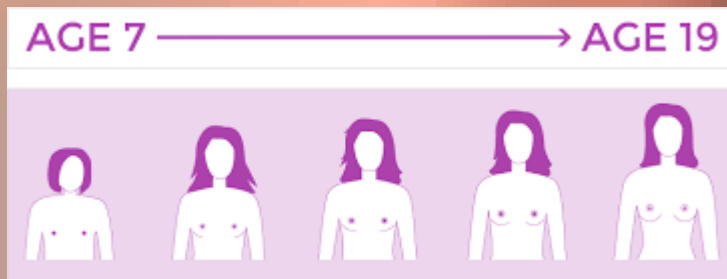
In the post-pubertal years the breasts continue to grow and form more fat tissues. Mature female breasts are not only bigger in size but also their areola starts to recess and cause the nipples or papillae to bulge or extend above the breast contours. These changes mark the development of mature female breasts with visible curves. It also marks the end of previous skinny and teenage look. It can be called maturity but the fullness of breasts is only achieved during pregnancy period.

In pregnancy, hormones are released to prepare the breasts for lactation stage. These hormonal changes add to the size and fullness of breasts, making the breasts look more curvy and full.

Breasts mark the feminine beauty.

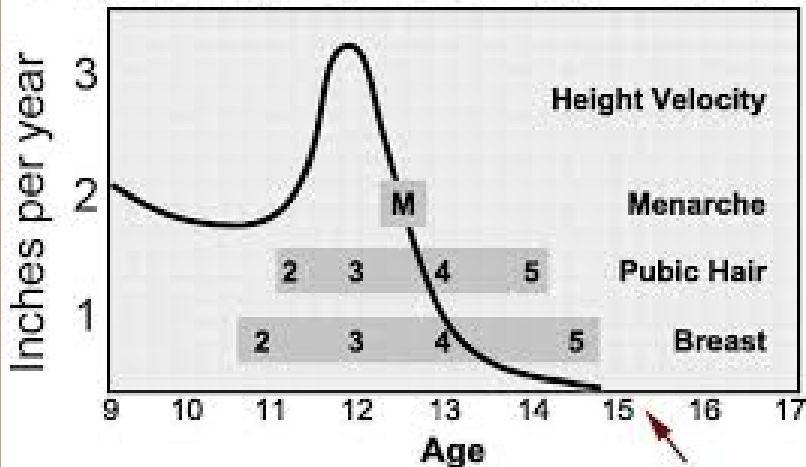
EARLY CHILDHOOD AND ADOLESCENCE

- Concomittant with these events is an increase in connective tissue and adipose tissue within the stroma, causing the gland to enlarge.
- Full development occurs at about 20 years of age
- Minor cyclic changes occur during each menstrual period,
- Major changes occur during pregnancy and in lactation.

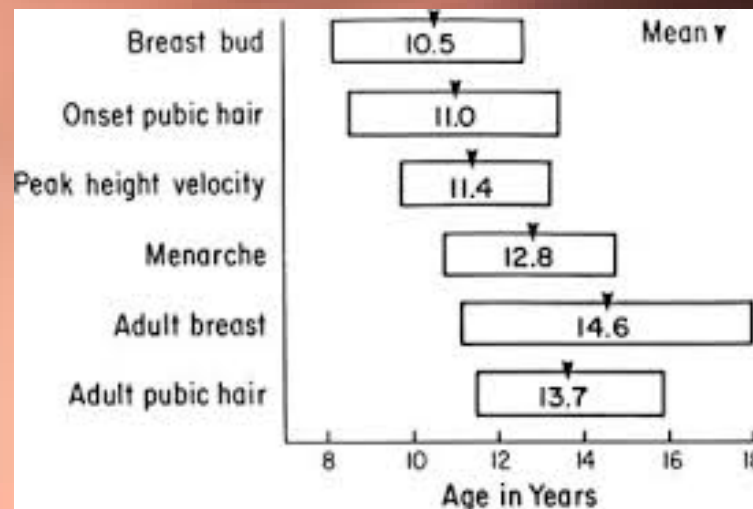
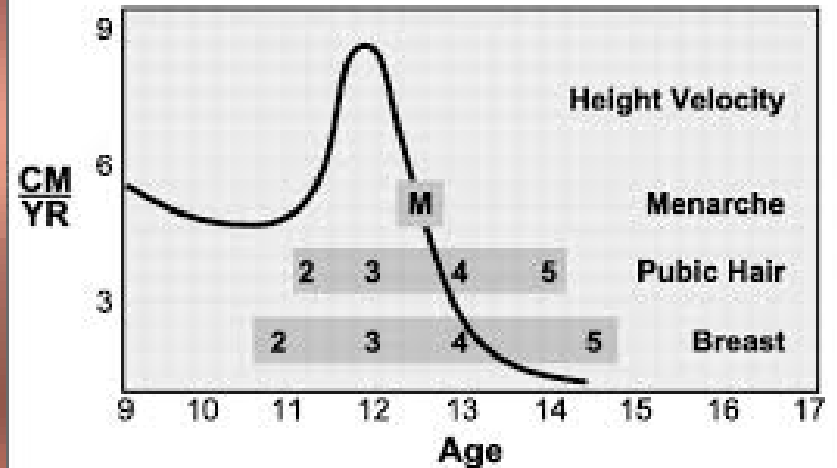


GROWTH PUBERTY

Growth Rates in Girls



Sexual Development: Girls



What Changes Normally Occur During Menstrual Cycle?

- Changes in the texture of breast are reported during menstrual cycle, these textural changes may range from breast tenderness to lumpiness that happen due to spike in the hormones (progesterone) causing menstruation.
- Hormones are released by the glands in the breast, enlarging them to prepare for a possible pregnancy.
- If pregnancy does not happen, the breasts return to normal size.
- Once menstruation begins, the cycle begins again.



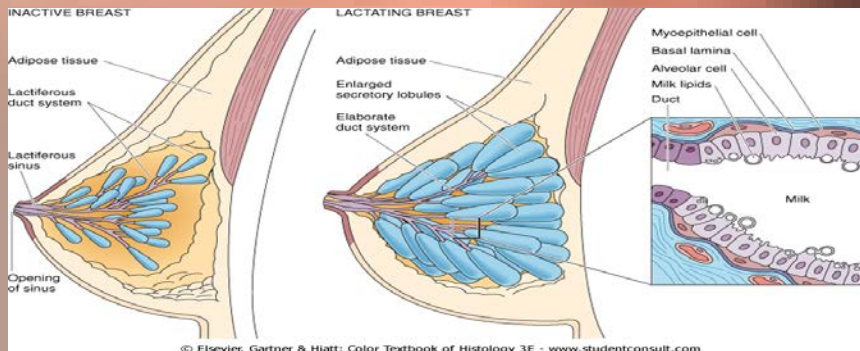
Breast Changes during Pregnancy and Lactation Period

- Breast changes are one of the first signs of pregnancy, since these are also related to the [lactation](#) period.
- There is rapid breast swelling during pregnancy.
- Most pregnant women experience tenderness down the sides of the breasts and soreness of the nipples. This is because of the growth of the milk duct system and the formation of many more lobules.
- By the fifth or sixth month of pregnancy, the breasts are fully capable of producing milk.
- Other physical changes, like the prominence of the blood vessels in the breast and the enlargement and darkening of the areola happen. All of these changes are in preparation for breastfeeding stage after the child birth.



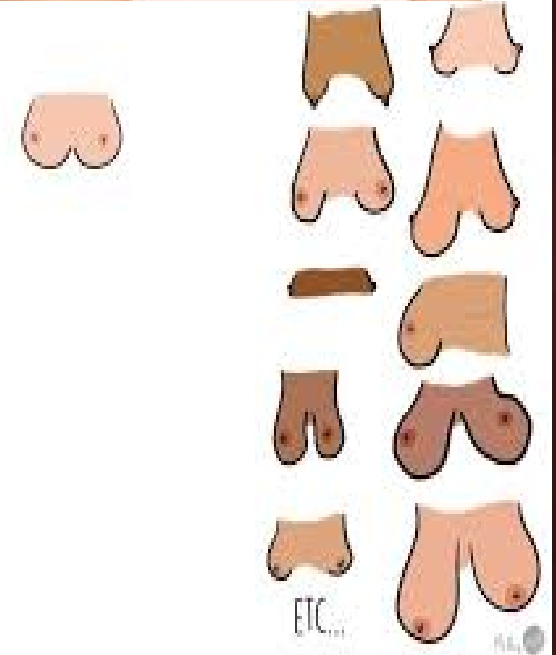
MILK PRODUCTION

- Increased blood supply to the breasts brings important nutrients for milk production
- Milk is formed as small fatty globules within the cytoplasm of the secreting cells of the alveoli.
- Globules arise in the bases of these cells and gradually unite to form small droplets
- As new globules are produced the droplets are pushed towards the surface of the cell until they burst
- Through cell membranes they enter the lactiferous tubule accompanied by a little cytoplasm of the cell substance.



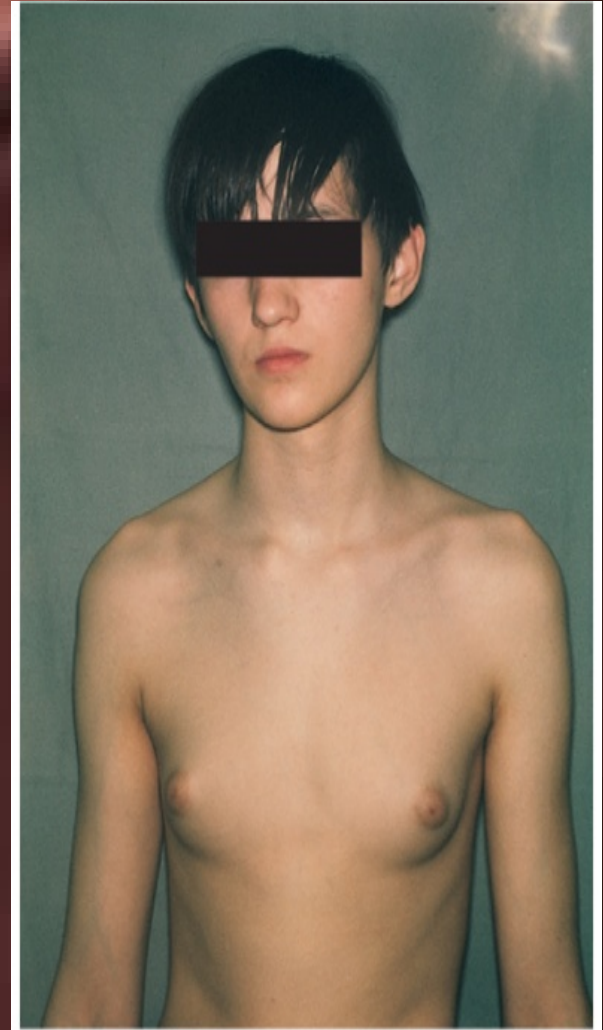
40'S

- After age 40 or so, the secretory portions and some of the ducts and connective tissue elements of the breasts begin to atrophy, and they continue this process throughout menopause.



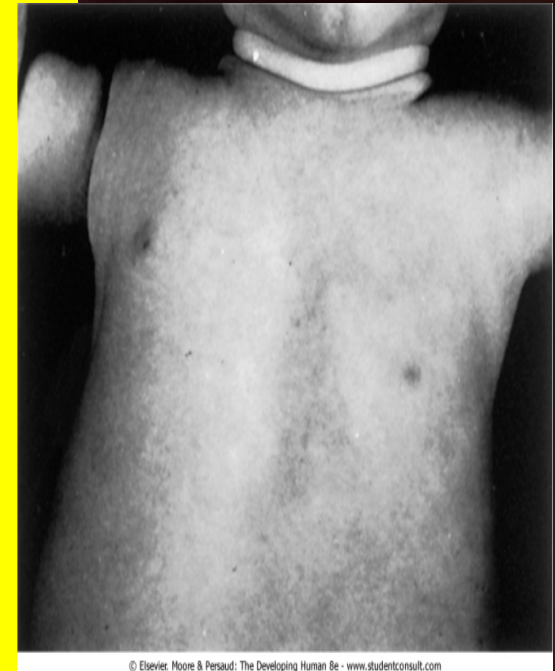
PUBERTY PROBLEMS

- **Gynecomastia**
- The rudimentary lactiferous ducts in males normally undergo no postnatal development.
- **Gynecomastia** (Gr. *gyne*, woman + *mastos*, breast) refers to the development of the rudimentary lactiferous ducts in the male mammary tissue.
- During midpuberty, approximately two thirds of boys develop varying degrees of hyperplasia of the breasts. This subareolar hyperplasia may persist for a few months to 2 years.
- A decreased ratio of testosterone to estradiol is found
- 80% of males with **Klinefelter syndrome (XXY)** have gynecomastia.
-



PROBLEMS

- **Absence of Nipples (Athelia) or Breasts (Amastia)**
- Rare congenital anomalies may occur bilaterally or unilaterally.
- Result from failure of development or disappearance of the mammary crests.
- May also result from failure of mammary buds to form



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Aplasia of Breast

- The breasts of a postpubertal female often differ in size. Marked differences are regarded as anomalies because both glands are exposed to the same hormones at puberty.
- In these cases, there is often associated rudimentary development of muscles of the thoracic wall, usually the pectoralis major

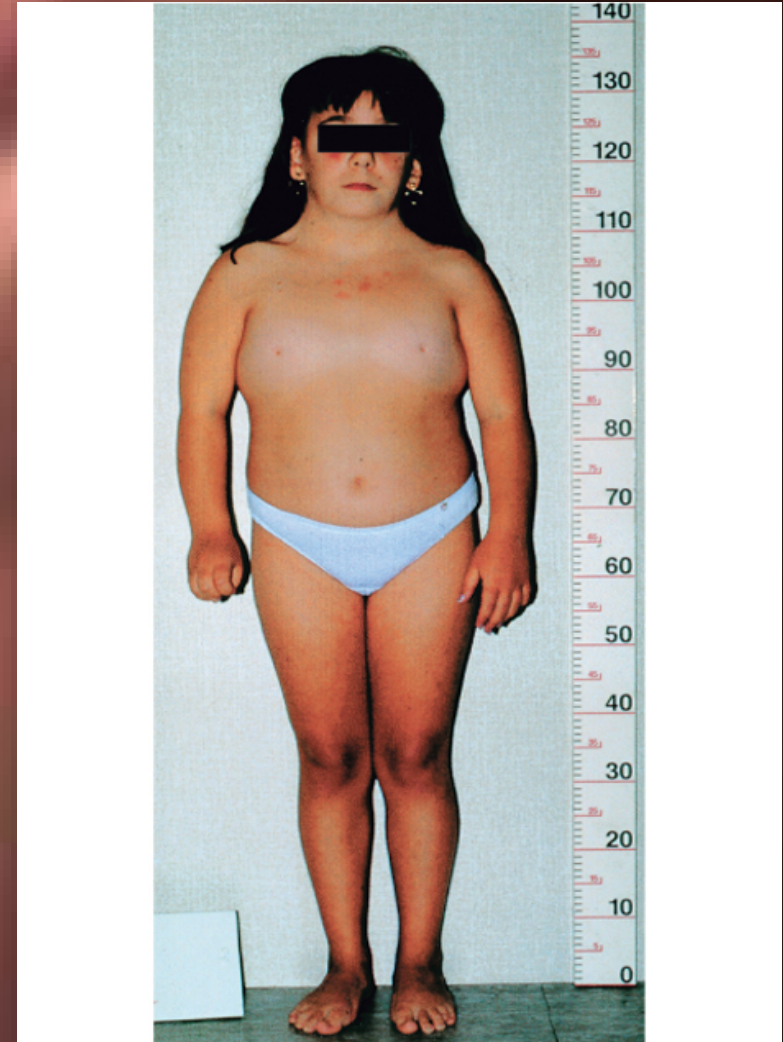


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HYPOPLASIA

More common is hypoplasia of the breast, often found in association with gonadal agenesis and Turner syndrome .



- **Supernumerary Breasts and Nipples**
- An extra breast (**polymastia**) or nipple (**polythelia**) occurs in approximately 1% of the female population as an inheritable condition.
- An extra breast or nipple usually develops just inferior to the normal breast.
- **Supernumerary nipples** are also relatively common in males; often they are mistaken for moles
- Less commonly, **supernumerary breasts** or nipples appear in the axillary or abdominal regions of females developing from extra mammary buds that develop along the mammary crests. They become more obvious in women when pregnancy occurs.



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Approximately one third of affected persons have two extra nipples or breasts.

Supernumerary mammary tissue very rarely occurs in a location other than along the course of the mammary crests. It probably develops from tissue that was displaced from these crests.



ABNORMALITIES OF BREASTS IN PUBERTY AND ADULTS

- Inverted Nipples
- Nipples fail to elevate above the skin surface after birth, remaining in their prenatal location
- Nipple piercing
- May make breast-feeding of an infant difficult



Things That Happen To BREASTS with age

1. Breasts share a woman's journey through life
2. They embody not only what it means to be a woman, but what it also means to learn self-acceptance.
3. As women age, they change due to factors like diet, stage of life, and genetics.
4. The most dramatic changes in breasts often occur during our 40's when less estrogen and women enter pre-menopause, then menopause.



11 Ways Breasts Can Change In 20s & 30s

- Breasts can be both a blessing and a curse.
- regardless of their size or shape, breasts can change in your 20s and 30s to the point where women may be left stunned, annoyed, or even worried.



1. Areolae May Get Darker and viens

- It sounds kind of peculiar — an area of body changing color. But it is definitely something that can happen to the area around your nipples over time. "It doesn't necessarily happen to everyone,
- areolae can start looking larger and darker than it did before, which is totally normal,"
- It's not cause for concern, but it can be pretty strange.




Lane Moore, with Karen Boyle, M.D.,
on *Cosmopolitan*

2. Breasts Will Probably Fluctuate In Size

- Breasts can fluctuate in size for a seemingly unending list of reasons.
- (Think about how they feel huge when you're on your period, due to that influx of hormones)
- But another culprit affecting the size of breasts is weight gain.
- breasts are made up of breast tissue (including lobules and ducts that are called into action while breastfeeding) and fat tissue "gaining weight, breasts increase in size." And the opposite is true for weight loss.



How to Measure your Bra Size



1 Bust Size
While wearing a non-padded bra, measure the fullest part of the bust, while holding the tape parallel to the floor. Note the measurement in inches and round it off to the next whole number.

2 Band Size
Measure around the rib cage, directly under the bust. Note the measurement in inches, and round it off to the nearest whole number. If the number is even, then add 4 to it and if the number is odd, then add 5. The sum is your band size.

| If your underbust is | 27" to 28" | 29" to 30" | 31" to 32" | 33" to 34" | 35" to 36" |
|------------------------|------------|------------|------------|------------|------------|
| Then your band size is | 32 | 34 | 36 | 38 | 40 |

3 Calculating your Cup Size
Subtract the band size from the bust size to determine your cup size.
Example: If Band Size = 32 inches and Bust Size = 34 inches, then the Cup Size = 34 - 32 = 2 inches; which corresponds to a B cup.

| If the difference is | 0" | 1" | 2" | 3" | 4" | 5" | 6" | 7" |
|-----------------------|----|----|----|----|----|----|--------|----|
| Then your cup size is | AA | A | B | C | D | DD | DDD, F | G |

3. Breasts Can Get Stretch Marks

- As breast size changes — due to weight gain, weight loss, or pregnancy — little lines starting to appear on skin. These are stretch marks, and they can show up regardless of your age or skin color.
- "If women gained weight recently, breast and stretch marks were likely caused by this,
- " "Even after losing excess weight, some evidence of the stretch marks will always remain, but they will become fainter and less noticeable."



"YOUR BODY IS NOT RUINED.

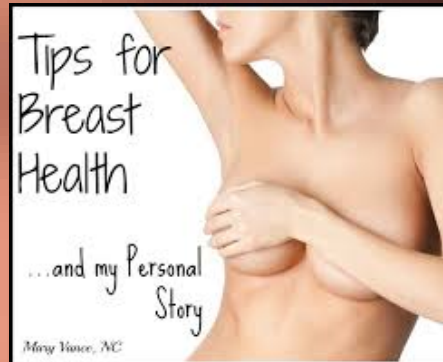
**YOU'RE A TIGRESS WHO HAS
EARNED HER STRIPES"**



Richard Kalinowski on the health website
Livestrong.com.

4. Lumps & Bumps

- All women should know [how to do a breast cancer check](#), and should do it regularly. This is a great way to catch cancer early on. But it's also a great way to scare yourself with other, totally harmless, lumps and bumps.
- If you feel anything lurking under the surface of your skin, don't panic — it's likely nothing more than a benign cyst. "Fibrocystic change, which is a very common condition characterized by [benign lumps in one or both breasts](#), often emerges when women are in their 20s,
- should get them checked out, but they are usually nothing to worry about.

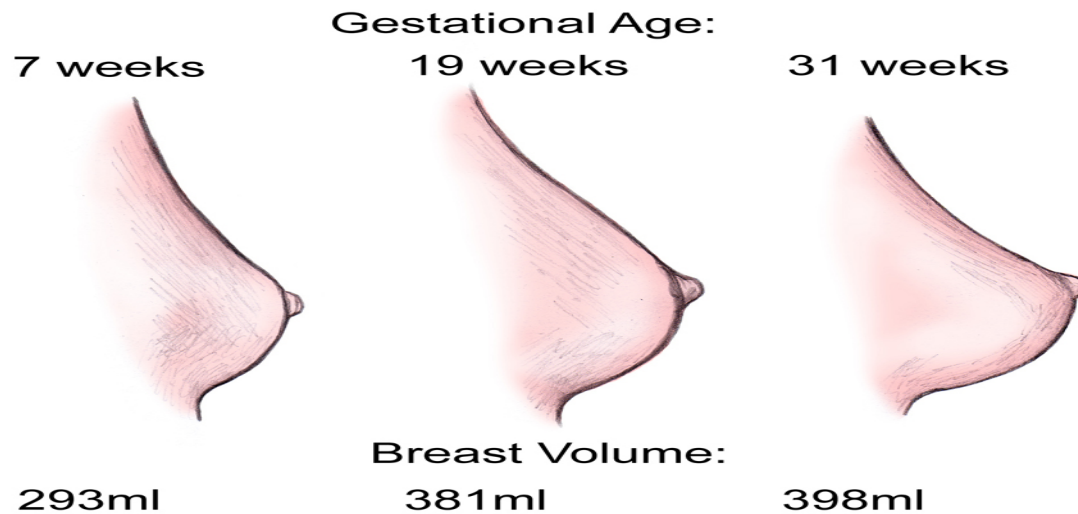


Zahra Barnes, in an interview with Lisa Jacobs, M.D., on *Women's Health*.

Changes in pregnancy

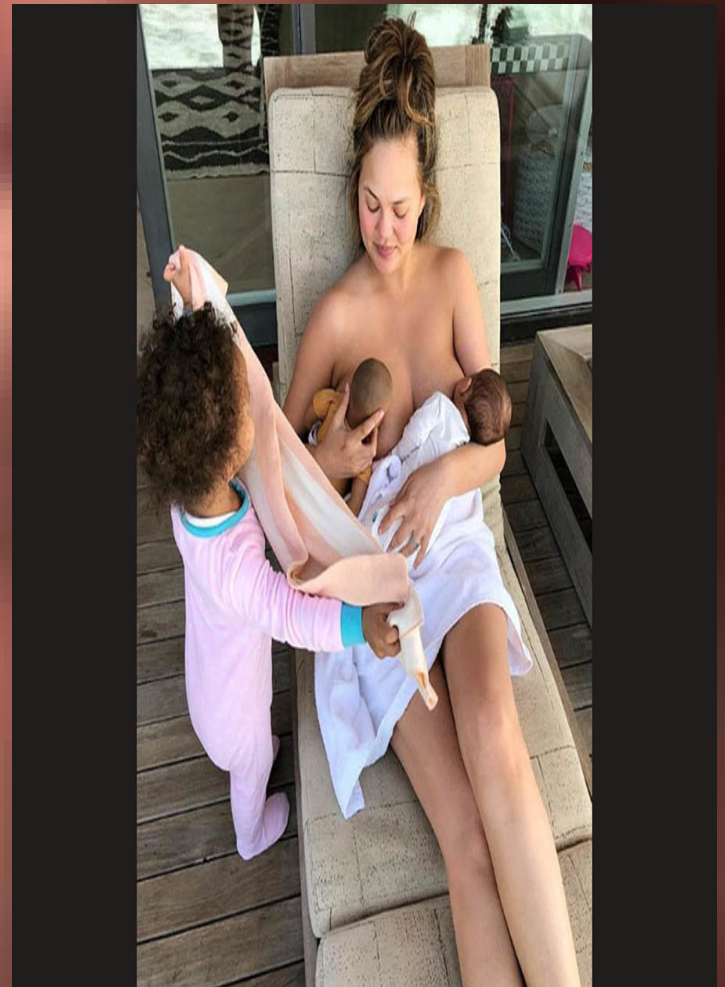


During pregnancy



5. They'll Be Less Full After Pregnancy

- 20s and 30s are obviously prime baby making time, so [changes brought on by pregnancy](#) are worth noting.
- gain weight during pregnancy, and this will mean fuller breasts.
- lactation and breastfeeding to contend with, which can also affect the size of breasts.
- But once that's all over and done with, things don't necessarily go back to normal.
- "Breasts shrink, the fullness is gone, [there is laxity in the skin](#) and less tension on the suspensory ligaments,".
- This may mean droopier breasts



gynecologist Kevin M. Audlin, MD, in an interview with Aviva Patz on *Prevention*

FEMINISM

23 JUNE 2013

**Sexy breasts are for the men,
lactating, stretch-marked breasts
are for the women**



6. Nipples May Protrude

- Another post-pregnancy milestone to expect is larger nipples, as well as darker areolas. And these changes can end up being permanent.
- protruding nipples may stick around
- Post lactating milk could ooze out for many days
If a woman was used to nipples looking a certain way, it can be disconcerting.



according to Patz.

7. They May Start To Droop

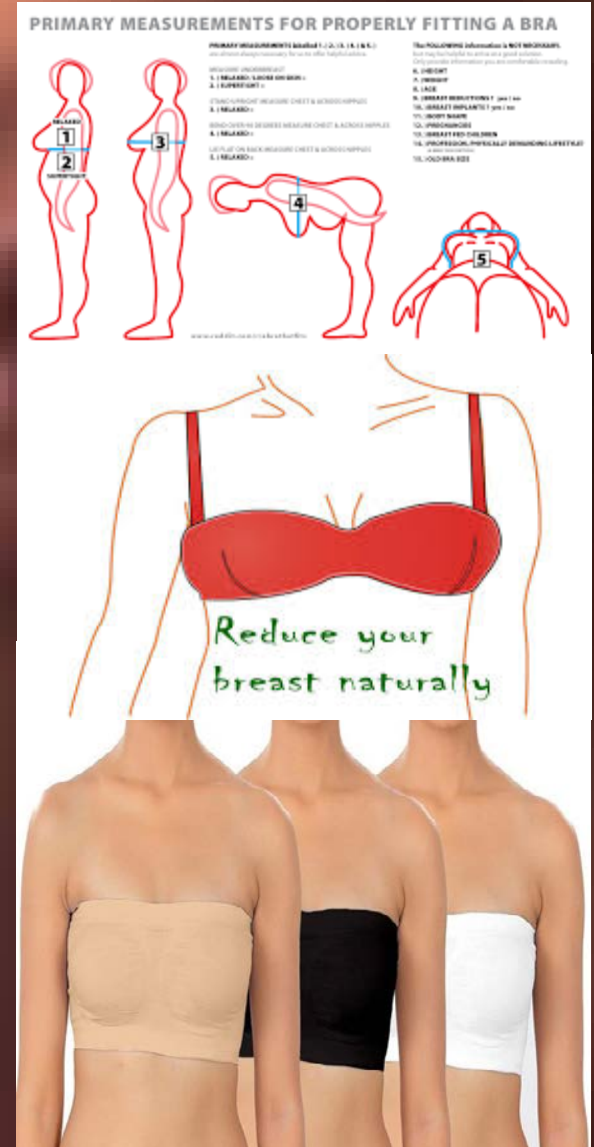
- OK, "droop" is kind of a upsetting term, as it makes your breasts sound like a dying flower.
- So let's say breasts will start to "settle" in your 20s and 30s.
- "Having a baby, breastfeeding, and racking up more birthdays all contribute to a loss of elasticity of collagen, the connective tissue under the skin,".
- "Sag can also be a matter of genetics.
" So if mothers breasts "settled" early on, then daughter's pair may do the same.



8. They May Be Worse For Wear After Exercise

- healthy amount of exercise, is needed regardless of how it affects breasts.
- But so many 20- and 30-somethings hit the gym, that possible post-workout breasts settling is worth mentioning.
- "The research is scant right now, but some experts say that the back-and-forth repetitive motions that happen in running or a similar workout can lead to a breakdown of breast collagen,
- It doesn't mean women should quit the gym, but it may mean switching up the routine or wearing a better bra

if sagging is something women worry about...sports BRA during GYM or RUN time



Crain

9. Birth Control Pills May Make Them Bigger

- Birth control pills are obviously a miraculous invention.
- And yet they can cause all sorts of mild side effects
- These effects may include weight gain, mood swings, and nausea,, as well as changes to breasts.
- it's completely normal if women experience a little boost in breast size when start birth control.
- " It's all due to the increased estrogen, which can lead to fluid retention.

TODAY WITH VERY LOW DOSE PILLS

THESE EFFECTS ARE LESS NOTICED



according to WebMD
As Fowler said, "...

10. One May Be Larger Than The Other

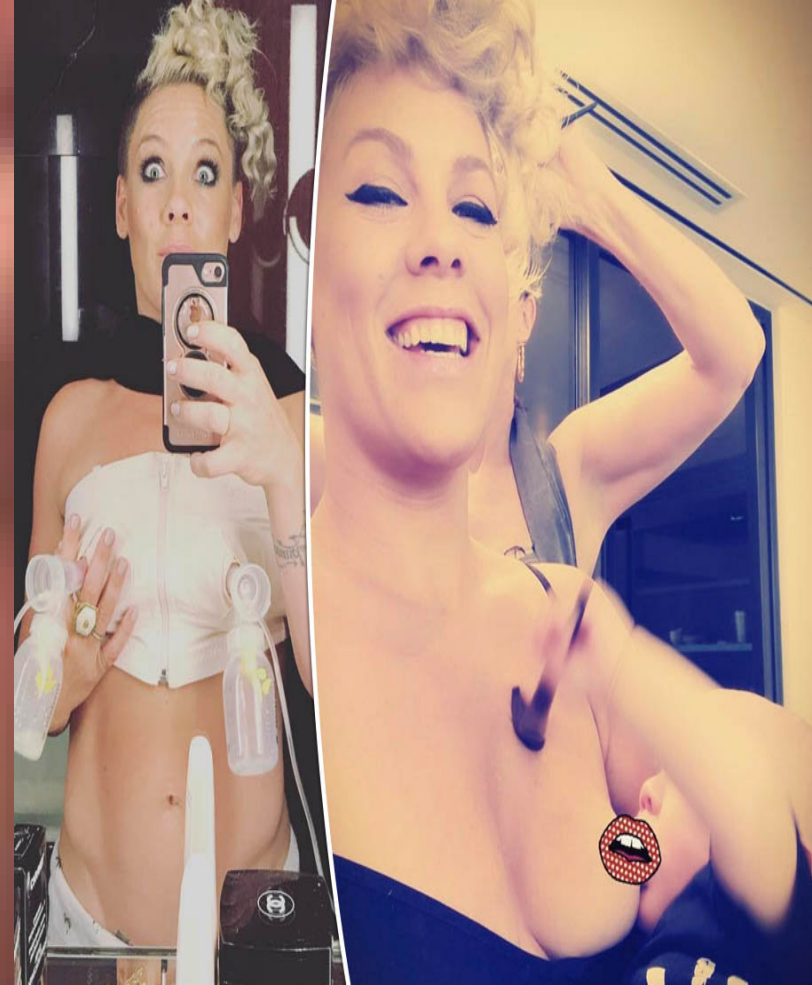
- Most breasts aren't the same size.
- The causes are numerous, from misaligned posture, to hormones, to pregnancy.
- Other times, it may be due to those underlying fibroadenomas,
- It's totally normal, and nothing to be embarrassed about.



Arpana M. Naik, MD, on HealthyWomen.org

11. Breasts Become Something To Look After

- every lady should know [how to do a self breast exam.](#)
- If something concerning, an appointment with gynecologist, ASAP.
- But other than that, women in their 20s and 30s kind of get off easy when it comes to caring for their breasts.
- Mammograms [think about until 45-50](#)
- If a family history of breast cancer, however, those scans may need to start earlier



according to Diana Zuckerman, Ph.D. and Anna E. Mazzucco, Ph.D. on StopCancerFund.org

How Breasts Change in 20's,30's, and 40's

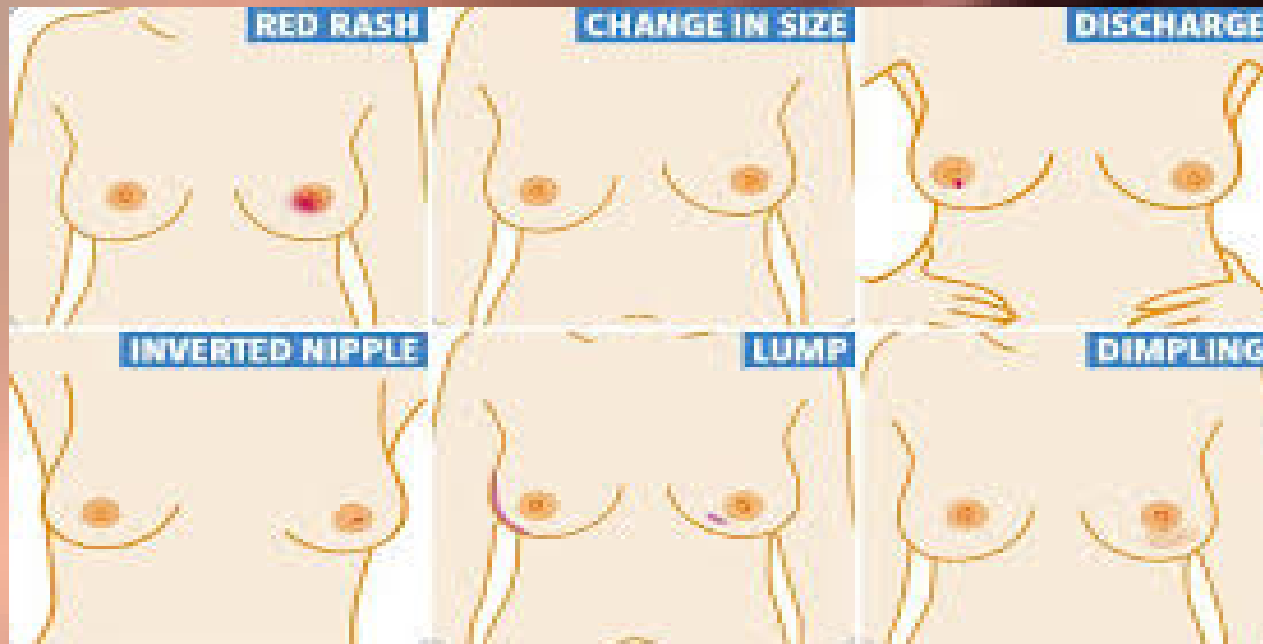


FURTHER READING MATERIAL
More from *Women's Health*:



[How Dense Are Your Breasts?](#)
[7 Ways to Keep Your Breasts Healthy](#)
[31 Ways to Have More Fun With Your Boobs Every Day](#)

Common Problems in Breast



Some problems in breast development are quite common from adolescence to older age women however, these problems are not indicative of any breast cancer signs.



Breast Lumps:

- Occurrence of breast lumps is quite common for women between 20-50 years of age. However, it's important to investigate further through different diagnostic methods whether these [lumps are a sign of breast cancer](#) or not.



Breast Pain Or Tenderness:

- The breast pain or tenderness is “cyclical” and is usually caused by hormones regulating menstrual cycle.
- The pain or tenderness may start to occur before a few days of menstruation as well as during menstruation in most cases.
- Non cyclical breast pain occurs due to breast cancer and happens in very small percentage of women.



Nipple Discharge and inversion

- Most women experience this after breast feeding.
- Some women are born with inverted (pull in) nipples and everted (pull out) nipples.
- Nipple inversion is not really a concern but occasionally it is first sign of breast cancer.
- Hyperprolactinemia causes galactorrhea but discharge could also be without a raised PRL level



Breast Skin Changes:

- Skin problems occur that can cause itching, swelling, redness, itching, scaling.
- These however are not significant
- yet it's important to evaluate the reasons for all these symptoms through mammogram or any other required examinations.



When should a woman Consult her Doctor(gynaecologist)or breast surgeon?

- If a new breast problem
- Although breast problems are not really an emergency but delaying it can worsen them.
- Especially in cases of late puberty onset or breast growth beyond maturation stage, a doctor should be consulted!
- In case, initial evaluation shows no signs of breast problems but still women remain concerned, talk to your healthcare provider. Routine exams by the health providers can be scheduled
- referral to a breast specialist may be recommended.

Breasts play such an important role – they affect our body image, confidence and even our identity as women. They also change constantly throughout our lives. So here's what you need to know about healthy breasts, whatever your age



**What healthy breasts look like in
30s, 40s, 50s and beyond...and
what women can do**

BREAST AWARE PROGRAMME



"Being breast-aware means getting to know how your breasts look"



it's completely normal to have one breast larger than the other, hair around the nipple or even lumps. Some breasts may have one or both nipples pulled in (inverted), which can be there from birth or happen when the breasts are developing



- If women feel breasts just aren't what they used to be (or, as I sometimes joke - *where* they used to be!),
- advise them to have a professional bra fitting to make sure you're wearing the right bra shape and size for your changing body



BREAST AWARE

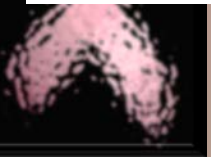
- 20'S

Start checking regularly(1;1000 chance of ca)
nipple piercing, be careful

- 30s

more important for women to be 'breast aware'
risk of cancer raises slightly in this decade compared to previous years.
checking your breasts once a month:familiar with what's normal
running a soapy hand over each breast and up under each armpit while in the shower or bath

- 40's get a yearly professional check...lifestyle
- 50's correct BRA and professional checks
- 60's take extra care
- 70's and beyond DO NOT LOSE SELF CONFIDENCE
- 80's Geriatric be proud of the assets and look after them

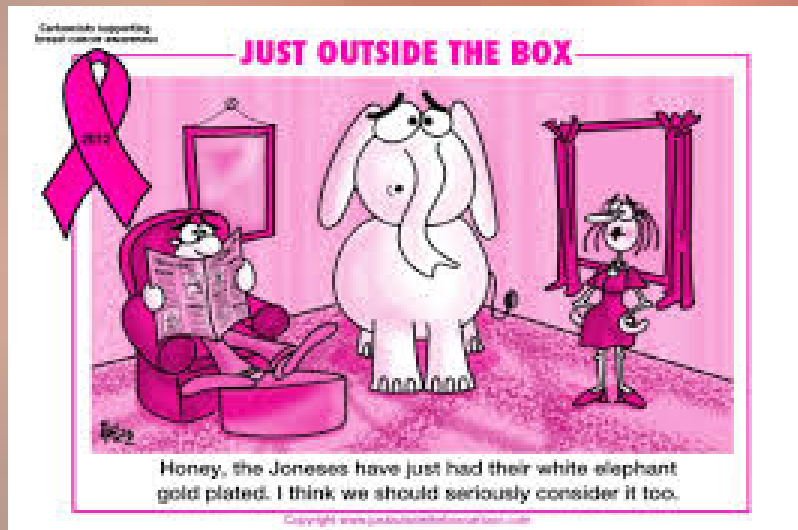




- A [breast self-exam](#) is a valuable way to become familiar with what is normal for women's body but is not a substitute for a doctor's exam or mammogram.
- Here are the [American Cancer Society's breast exam recommendations](#)
- Running a soapy finger during bathing
- Examining in front of a mirror
- Cyclical systematic self exam
- A professional check once a year after 40

- Finally, most women do experience changes in the way their breasts look and feel over the course of their lifetime.
- Fortunately, most of these shifts are simply cosmetic changes related to aging, rather than signs of more serious [age-related diseases](#).

THE PINK REVOLUTION HAS TO BE POPULARISED



THANK YOU FOGSI FOR HOSTING THIS VERY
IMPORTANT CONFERENCE FOR H.E.R.



I wear
PINK
for my hero,
my **MOM**

&

WIFE AND SISTER AND DAUGHTER
AND FOR ALL YOU LOVELY LADIES PRESENT
HERE TODAY

Breast Cancer Risk

- One of the greatest [risk factors](#) for [breast cancer](#) is advancing age. Almost 8 out of 10 breast cancer cases happen in women over the age of 50. According to the National Cancer Institute, women have the following chances of getting breast cancer by decade, over the age of 40:
 - Age **40**: 1.47 percent (or 1 in 68)
 - Age **50**: 2.38 percent (or 1 in 42)
 - Age **60**: 3.56 percent (or 1 in 28)
 - Age **70**: 3.82 percent (or 1 in 26)

- Factors like a personal history of breast cancer, family medical history, alcohol intake, physical inactivity and being obese or overweight can increase your chances of developing breast cancer. The American Cancer Society (ACS) recommends getting both a clinical breast exam and a mammogram once a year after the age of 40.