★ LIFESPAN OF FEMALE

divided into 3 PERIODS

FIRST
- from Birth
- Puberty 12-15yrs
- Primary & accessory sex organs did not operate; remain quiescent

SECOND
- from onset of puberty 12-15yrs
- onset of menopause 45-50yrs
- or from MENARCHE to MENOPAUSE
- during this period women menstruate & reproduce

THIRD
- from after menopause → rest of life.

★ PUBERTY:

- It is the period in ± both endocrine and gametogenic functions of gonads have reached/developed to a point where reproduction is possible (12-15yrs)
- During childhood, the gonads/ovaries remain quiet/ quiescent
- Adolescence is the period of final maturation of gonads brought about by gonadotrophic hormones - FSH & LH (from anterior pituitary)
- CONTROL: Hypothalamus contains Gonadotrophin Releasing Hormone
  Ant. Pituitary contains Gonadotrophin Hormones < FSH, LH
  Hypothalamus operates to prevent GnRH. At the time of puberty this inhibition is removed → GnRH secreted in pulsatile manner → Ant pit → FSH, LH → ovaries.
- EVENTS - ① THELARCHE - development of breasts
  ② PUBARCHE - development of axillary, pubic hairs

③ MENARCHE - onset of 1st menstrual period

④ ADRENARCHE - ↑ secretion of adrenal androgens
and ↑ secretion in minerals & glucocorticoids.

⑤ - Enlargement of uterus, fallopian tubes, ovaries, vagina
- Deposition of fat in buttocks, thighs, breast
- Enlargmt & widening of pelvis.

★ MENOPAUSE

- Climateric is a period in old age when Rep. system undergoes changes ∵ ↓↓ secretion of Sex hormones - Ⓔ, Ⓟ
  - 45 - 55 yrs.
  - accompanied by menopause
- Menopause is defined as the period when permanent cessation of menstruation takes place. (45 - 55 yrs)
- CAUSE:

∵ changes ∵ age in ovaries - small & fibrosed.

↓

fail to respond or develop resistance to GTH - FSH, LH.

↓

∴ ↓ Estrogen, Progesterone secretion and ovulation ceases → So FSH ↑↑↑ & LH ↑

↓ no of primordial ovarian follicles

- SYMPTOMS / POST MENOPAUSAL SYNDROME.

physical, physiological, psychological changes

∵ lack of Ⓔ, Ⓟ.

lasts till the body gets acclimatized to the absence of Ⓔ & Ⓟ.

Physical

↳ atrophy of FT, uterus, vagina

↳ size of mammary glands

↑ ∴ accumulation of fat

↓ atrophy of glandular tissue

↳ Hot flashes - feeling of warmth spreading from trunk towards face ; ∴ LH secretion corresponds to LH surge.

↳ Urinary disturbances
↑ frequency micturition

↳ palpitations

↳ osteoporosis

↳ atherosclerosis

physiological

↳ Vasomotor instability
↓
vide fluctn of BP.

Psychological

↳ fatigue

↳ nervousness

↳ Depression.

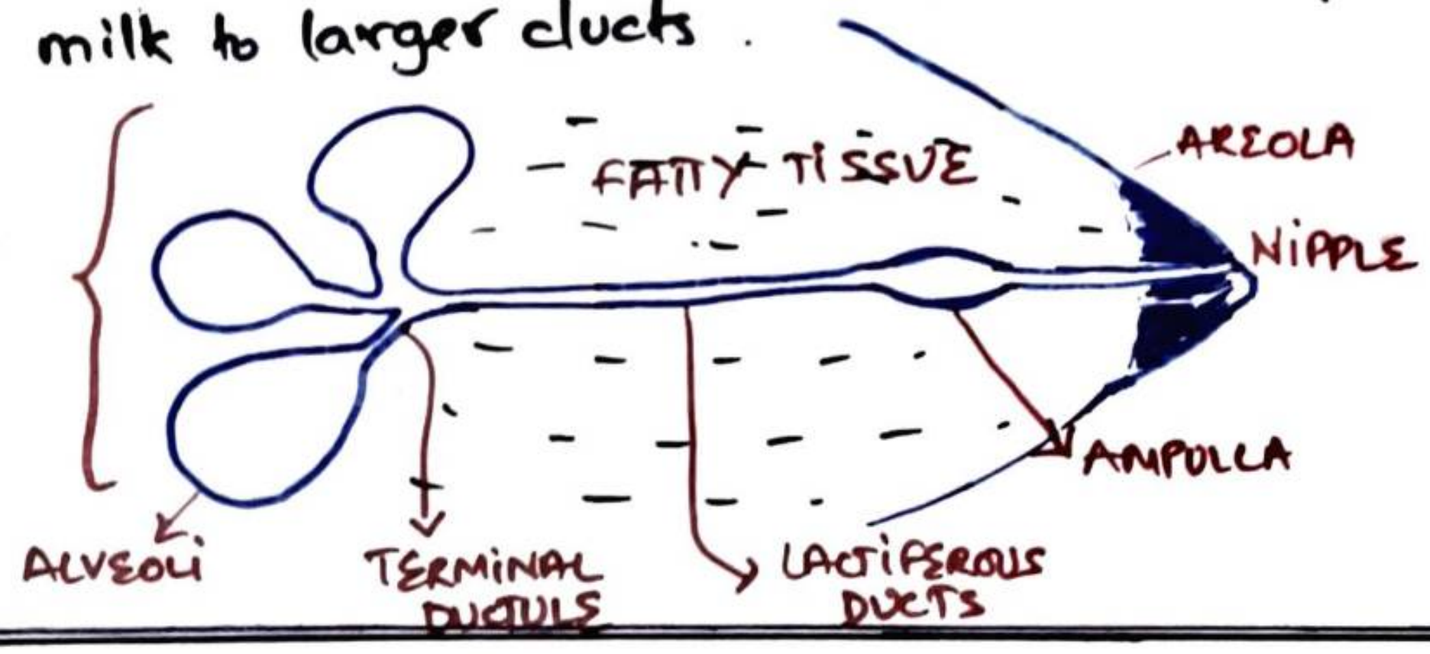
↳ Insomnia

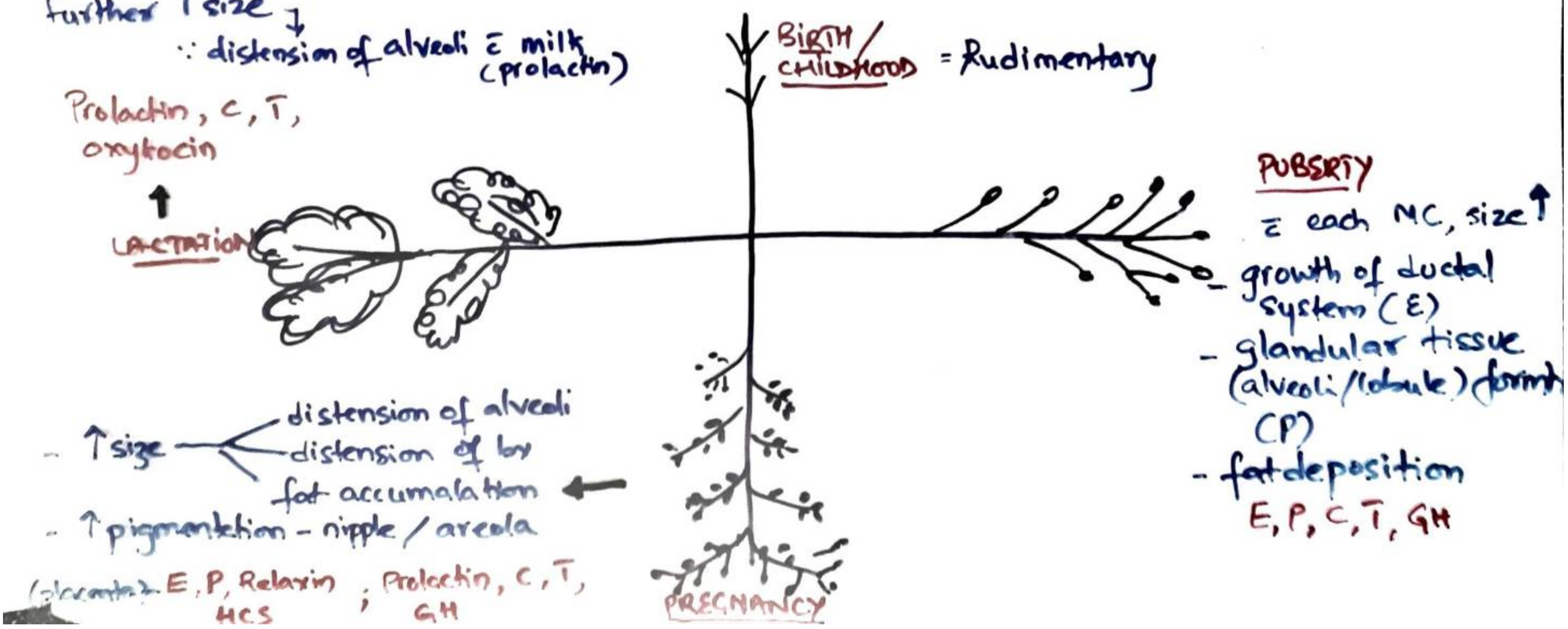
↳ Menopausal madness.

MAMMARY GLANDS / BREAST

- B/L glandular structure ≤ is an accessory reproductive organ, ass. ē lactation following childbirth.
- shape varies. Base (size) is constant = 2nd to 6th Rib in Mid-clavicular line (MCL)
- Whole Breast is embedded in subcutaneous fat.
- Each Breast is divided into 15-20 LOBES by fibrous tissue septa ≤ radiate from centre.
- Areola (pigmented) placed around centre of (B)
- Nipple - muscular projection covered by pigmented skin. Accomodates 15-2 LACTIFEROUS DUCTS and their openings.
- Fat i sent beneath Areola + Nipple.
- Behind ipple, the LACTIFEROUS DUCT dilates (AMPULLA), where milk is stored.
- 1 LACTIFEROUS DUCT DRAINS 1 LOBE.
- LACTIFEROUS DUCTS branch out into TERMINAL DUCTULES & lead to ALVEOLI (10 - 100)
- ALVEOLI - lined by Columnar Epithelium where milk secretion occurs.
  - Longitudinal striated cells MYOEPITHELIAL cells surround alveoli and smaller ducts → Contraction of these - squeezes " & ejects milk to larger ducts.

During preg alveoli ↑ form lobules " GLANDULAR nature





LACTATION

Milk Secretion

synthesis of milk from Alv. epithelium & its passage into lumen of gland

LACTOGENESIS

initiation of milk secretion

2-3 days after delivery

Placenta expelled → E, P ↓↓↓ → the ⊖ effect of E & P on prolactin is removed → ↑ Prolactin Releasing Hormone → Ant Pit → PROLACTIN [+ GH, cortisol, PTH, Insulin] → milk production

GALACTOPOESISIS

maintenance of milk secretion

∴

Prolactin
GH
Thyroxine
Cortisol

Milk Ejection

discharge of milk from mammary gland

(Neuroendocrine reflex)

Suckling by Baby on Nipple → Sensory impulse travels to Hypothalamus → Post. Pit → Oxytocin released → carried in Blood to the Breast → Contraction of Myoepithelial Cells (Contractile mechanism in breast) → MILK EJECTION

⊕ Prolactin secretion

Estrogen + Prolactin synergise/
work together in producing
breast growth. But Estrogen
⊖ the ability producing
effect of Prolactin on breast