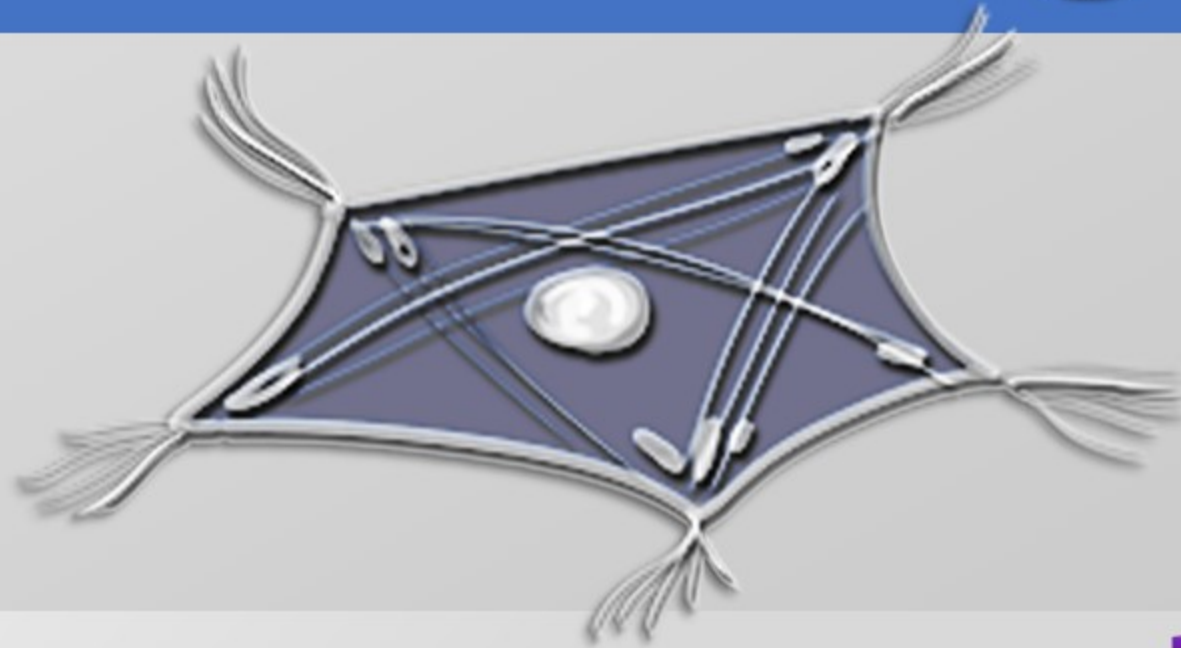


Myofibroblasts in Plastic Surgery



MYOFIBROBLASTS

Specialized Fibroblasts

SK
Sm
ca

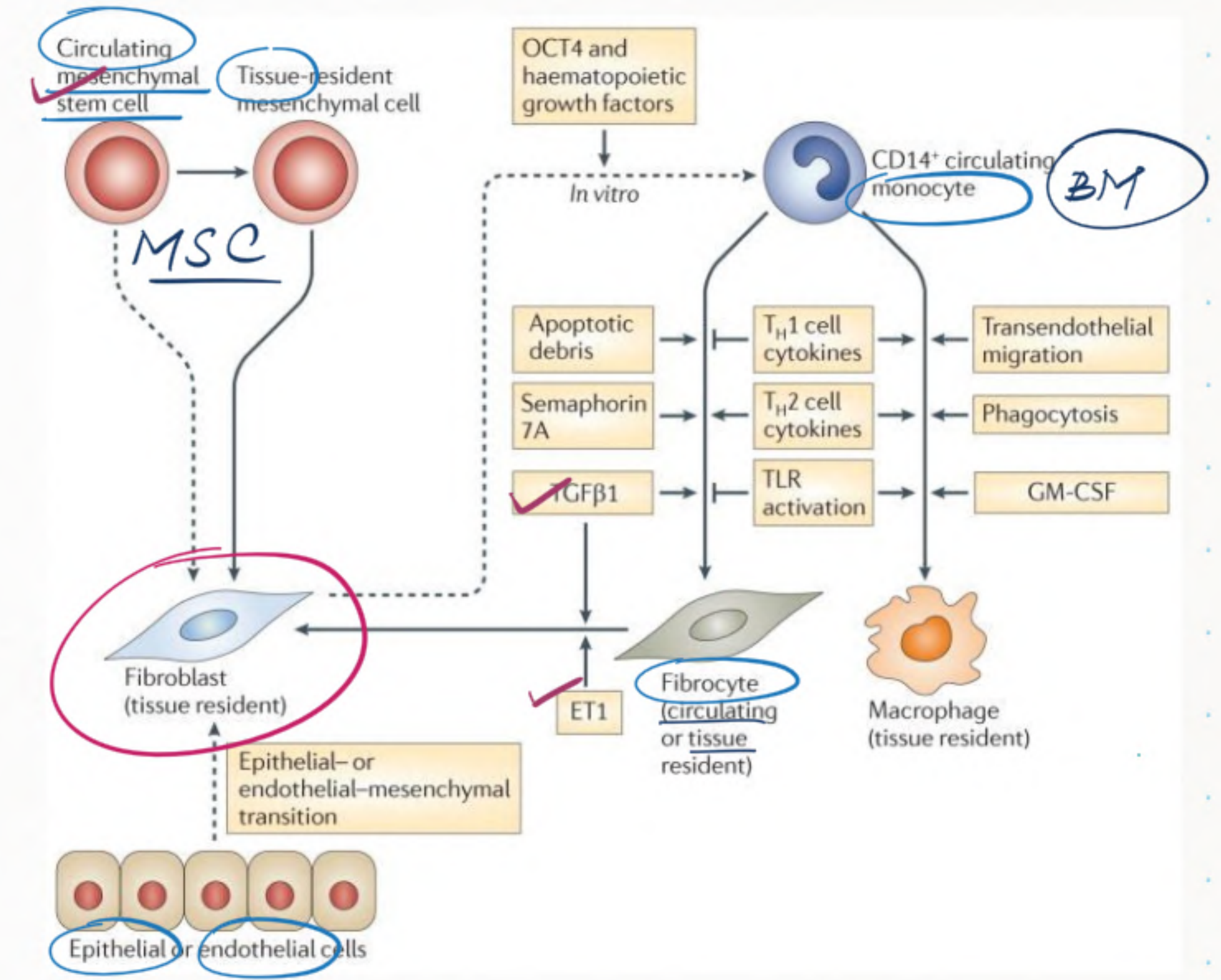


② α SMA

β, γ Ac
- Coat. cyt. meshwork

① - cytoplasmic microfilament

(STRESS FIBRES) bundles → CONTRACTILE.



MYOFIBROBLASTS

1978 -

Gap Jns → MULTI CELLULAR → SYNCYTIUM.
CONTR. UNITS (Ca²⁺)

1971



1986 → αSMA

2001 → Stress fibre + αSMA → ↑↑ contr.

2002 → ProtoMf, Mech reguln - ECM.

2004 → Stromal rxn → Tumor

↓
2010 → Recent
2012 → advances
(Therapeutic)

cytoplasmic
microfilament
bundles.

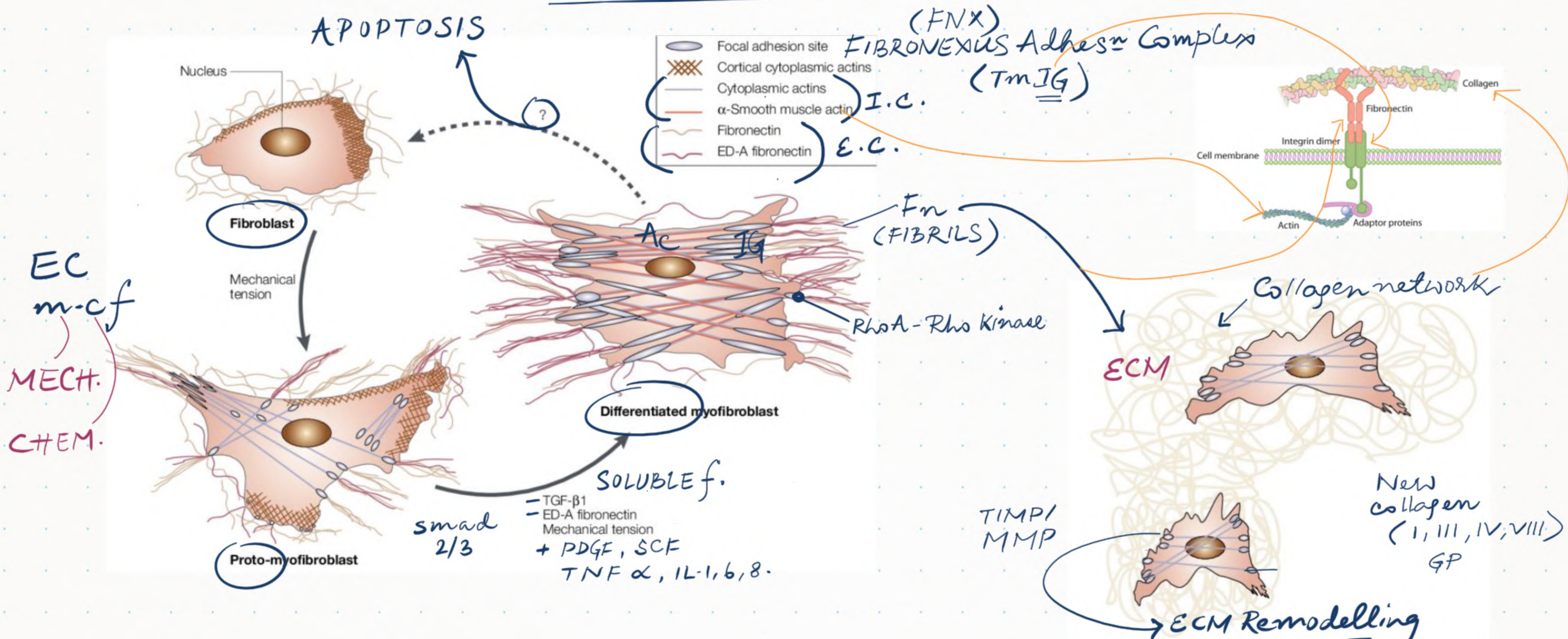
CONTRACTILE

GABBIANI
(Italy)

Granulato
ts

Geneva

MYOFIBROBLASTS



YouTube TUTORIAL → <https://youtu.be/IU4UO-2DtBM>

FULL ARTICLE → <https://www.plarecon.com/myofibroblasts/>

Physiological

(DERMAL) MYOFIBROBLASTS

- WOUND HEALING → CONTRACTN, REMODELING. (Day 3 → ↑ D10-21)

- INFLAMMATION

- ORGANOGENESIS

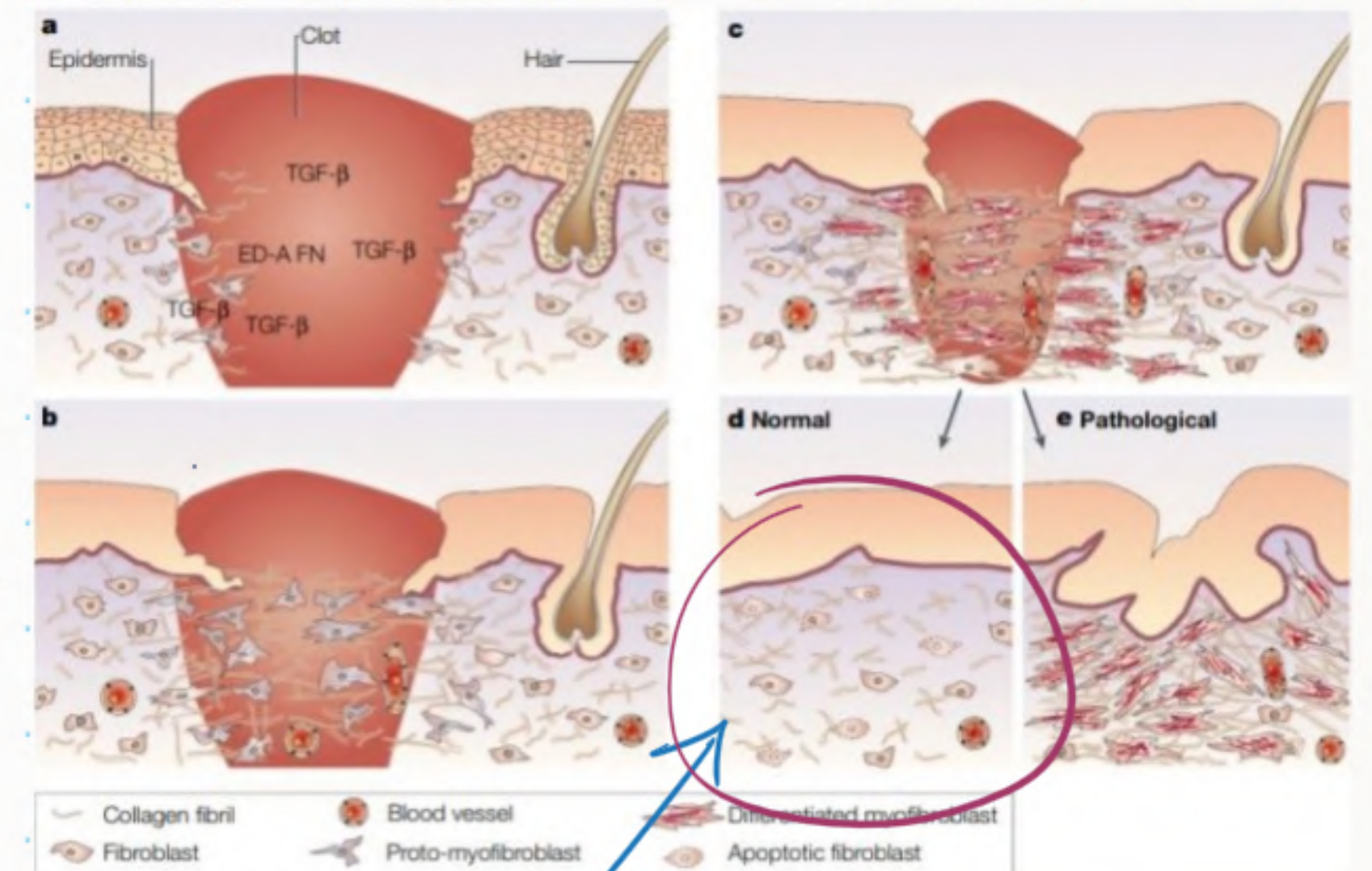
SCAR STABILIZN
(Bone #
cartilage/tendon
rupture)

- SSG/FTSG → CONTRACTN

- NON-OP FACIAL REJUVINATN

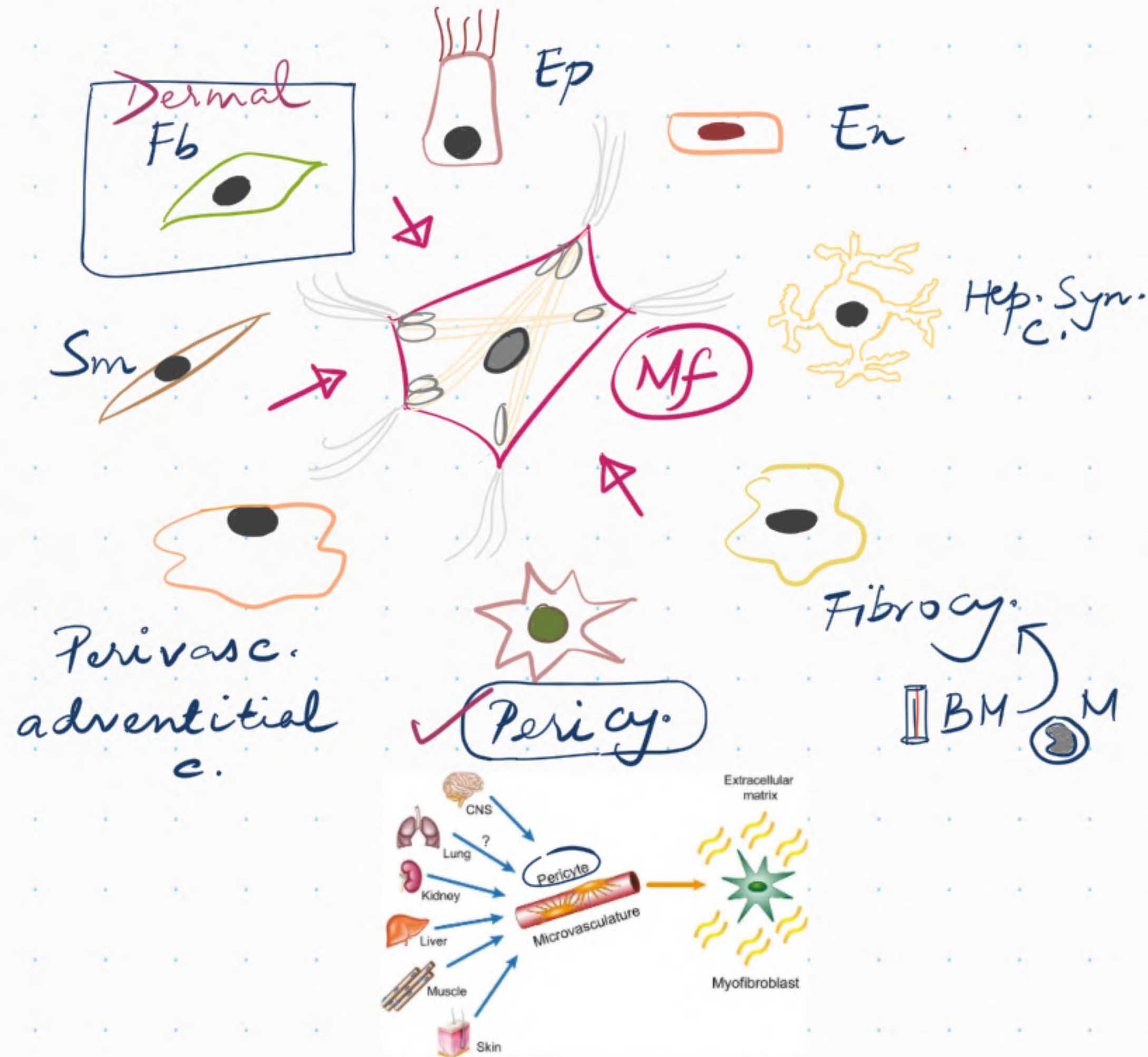
- DISTRACTN OSTEOGENESIS.

plays role in all 3 phases.



Physiological

Diffn into MYOFIBROBLASTS



Fibroblastic cells - ORGANS

Localization

- Uterine submucosa
- Reticular cells of lymph nodes and spleen
- Intestinal pericryptal cells
- Intestinal villous core
- Testicular stroma
- Theca externa of the ovary
- Periodontal ligament
- Adrenal-gland capsule
- Hepatic perisinusoidal cells
- Lung septa
- Bone-marrow stroma
- Capillary and venular pericytes

↓
Mf fn.

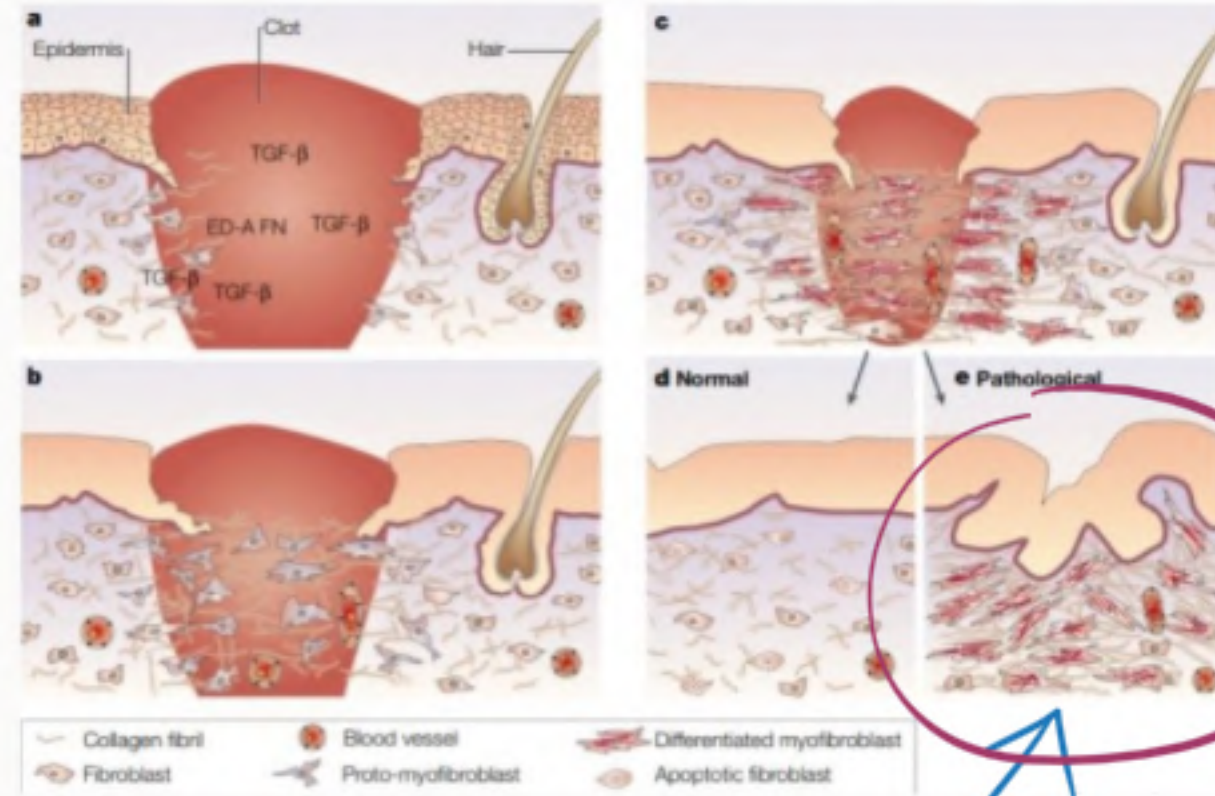
+ EYE - Cornea, ALC, Retina

→ BREAST - stroma

→ JOINT - Synovial cell

Pathological

MYOFIBROBLASTS



- HYPERTROPHIC SCAR (Wound)

- DUPUYTREN'S Contracture ...

- CONTRACTURES (trauma, burns)

- JT. STIFFNESS

- BREAST IMPLANT - Capsular Contracture

- NEUROMA



↑ FIBROSIS.

Pathological

MYOFIBROBLASTS

- ORGAN fibrosis (Lung, Liver, Renal, Nerve, Eye)

- Cardiac Infarct, Atheroma, Restenosis

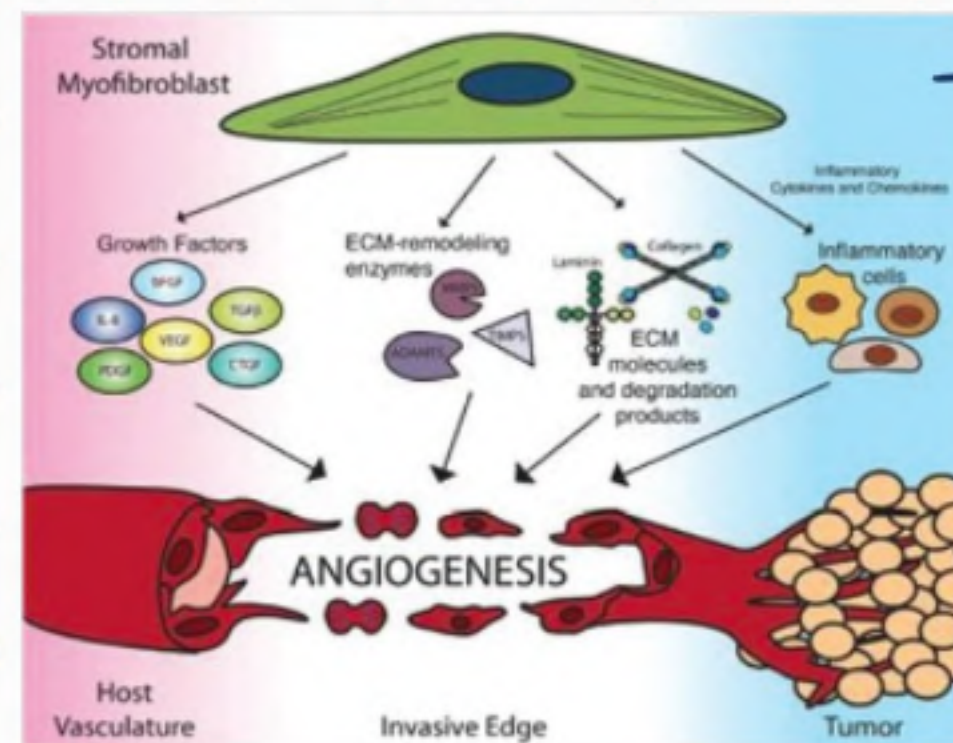
- R.P. Fibrosis, Intestinal Adhesion

- SCLERODERMA, SYSTEMIC SCLEROSIS

- Epithelial TUMOR →
Stromal rxn., invn., mets.

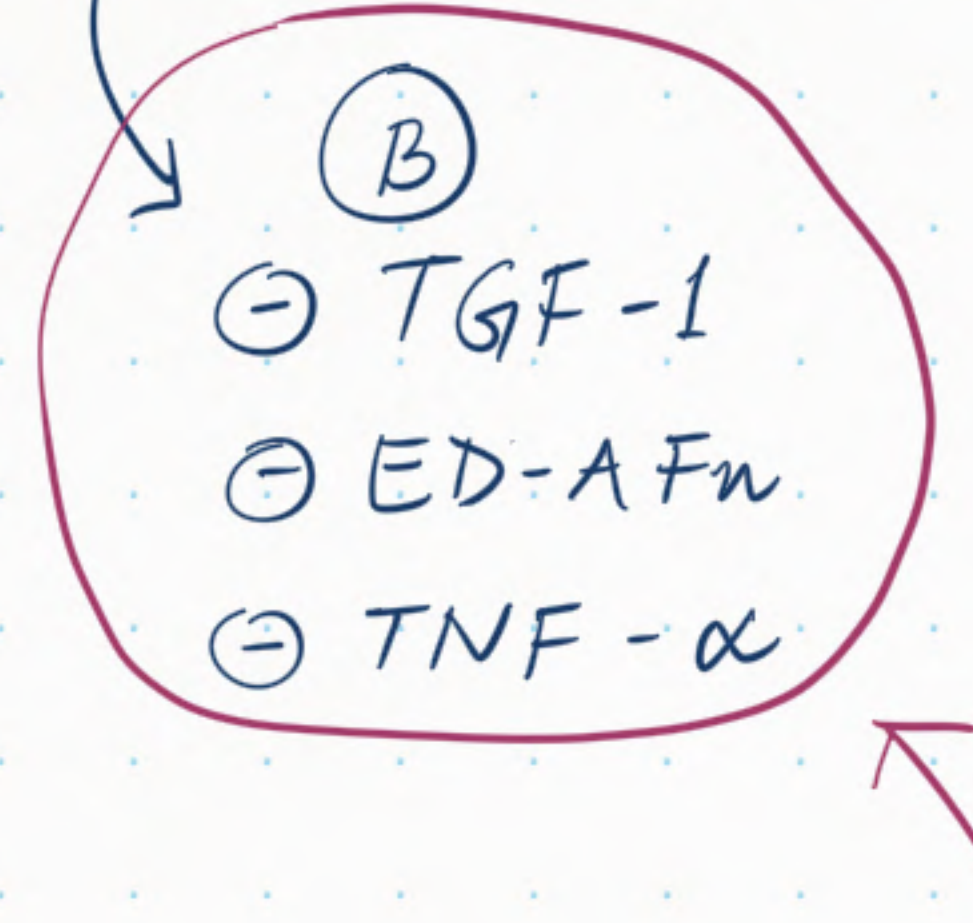
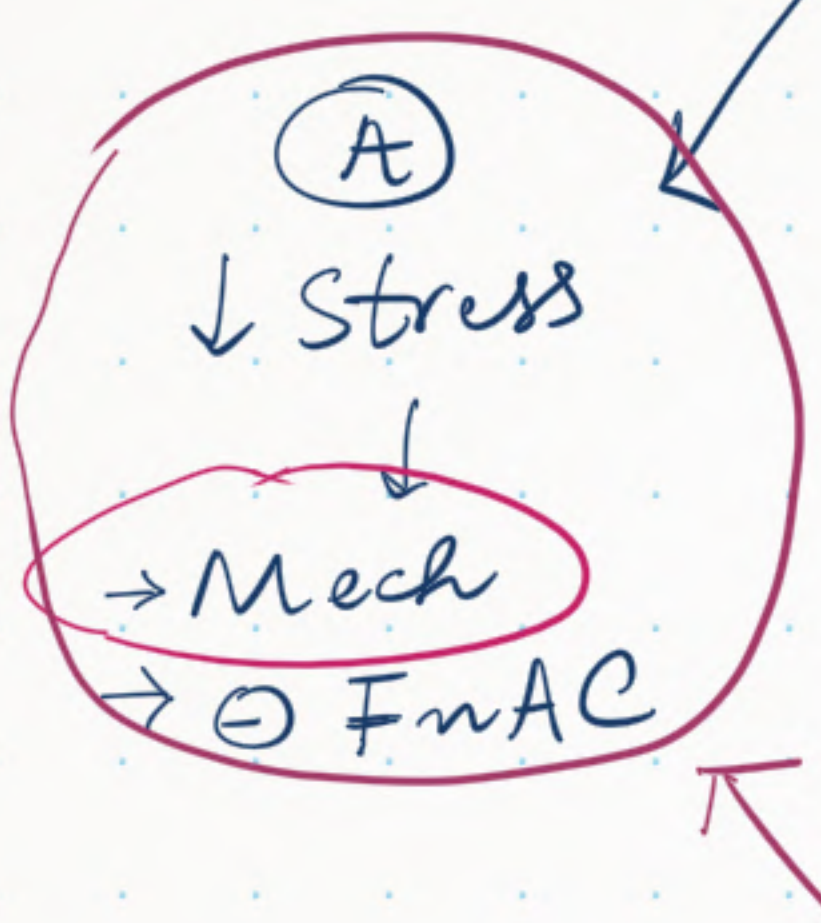
↙ Fibroblastic cells - ORGANS

Localization	
Uterine submucosa	↓ Mf fn?
Reticular cells of lymph nodes and spleen	
Intestinal pericryptal cells	
Intestinal villous core	
Testicular stroma	+ EYE - Cornea, ALC, Retina
Theca externa of the ovary	
Periodontal ligament	→ BREAST - stroma
Adrenal-gland capsule	
Hepatic perisinusoidal cells	→ JOINT - Synovial cell
Lung septa	
Bone-marrow stroma	
Capillary and venular pericytes	

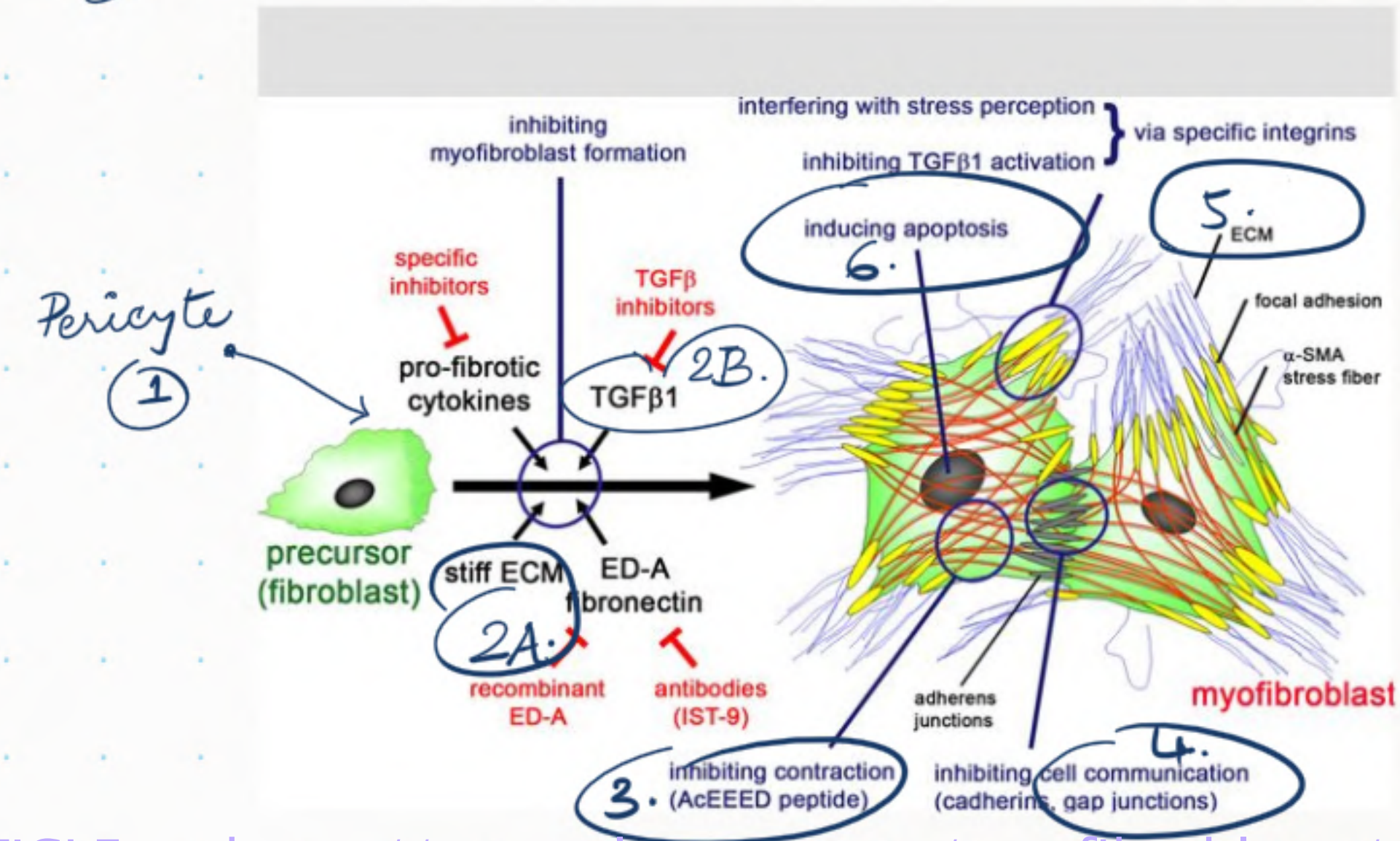
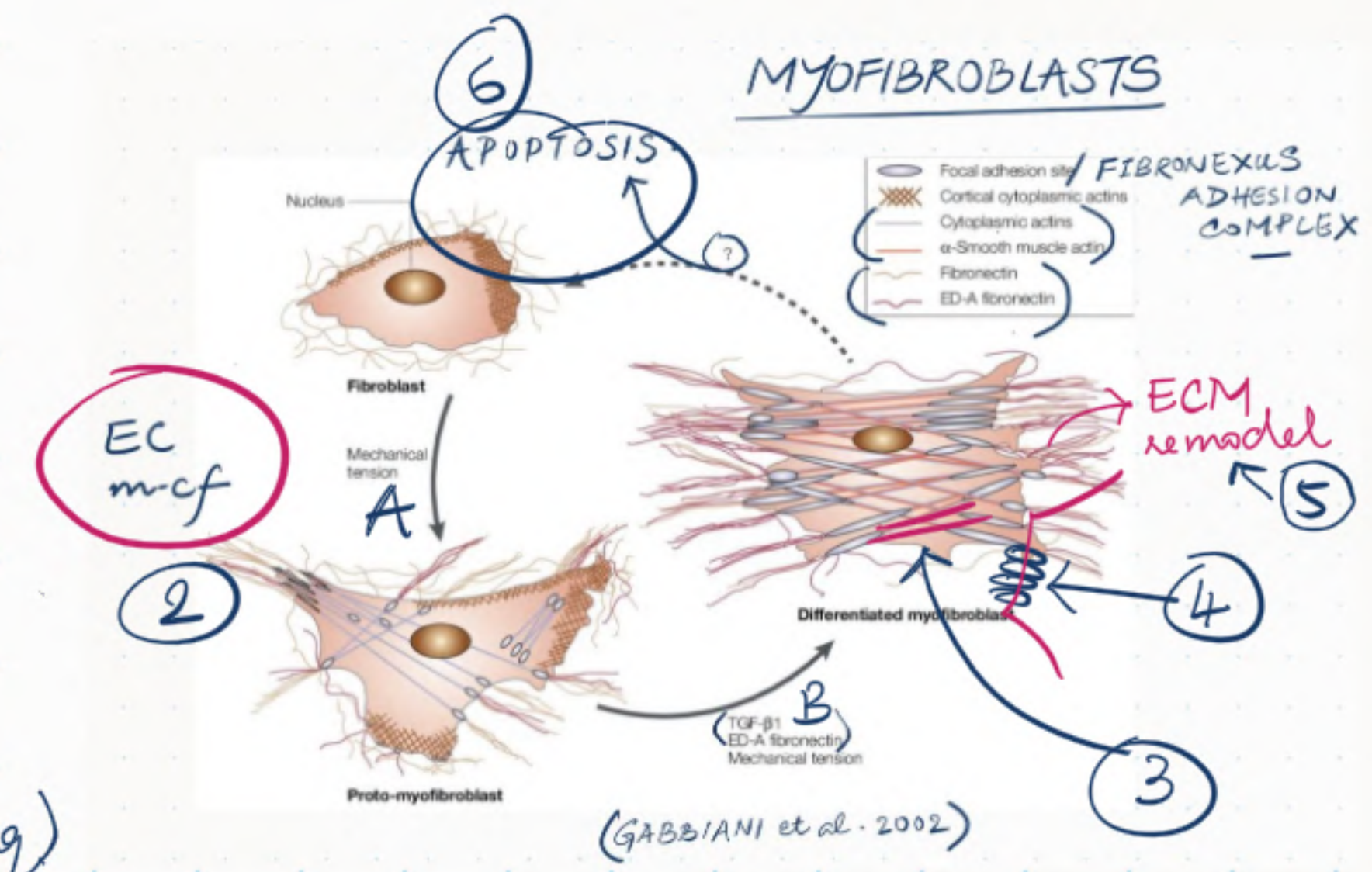


ANTI-FIBROTIC / THERAPEUTIC / Antiaging FUTURE TARGETS.

- ① Precursor / Progenitor cells (eg. PERICYTES)
- ② EC m - c f



- ③ IC Actin (Contract)
 - ④ ⊖ cell-cell communication (Gap jw, Cadherin.)
 - ⑤ ⊕ MMP (ECM Remodeling)
 - ⑥ ⊕ Apoptosis
- ↓ TIMP



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FULL ARTICLE → <https://www.plarecon.com/myofibroblasts/>

MYOFIBROBLASTS.

SIMPLE LINE DIAGRAM

